Norfolk Veneer Mills, Inc.

BOX 2157, CRADOCK STATION

PORTSMOUTH, VIRGINIA

PHONE: (804) 393-2551 FAX: (804) 397-3397

November 9, 1990

Mr. Herbert Berger
State Water Control Board
Tidewater Regional Office
287 Pembroke Office Park
Suite 310, Pembroke #2
Virginia Beach, VA 23462-2955

Dear Mr. Berger:

Attached please find the site characterization report prepared by Environmental Resources Management, Inc., for the two underground storage tanks removed from our property.

I will await your comments on the results of this report.

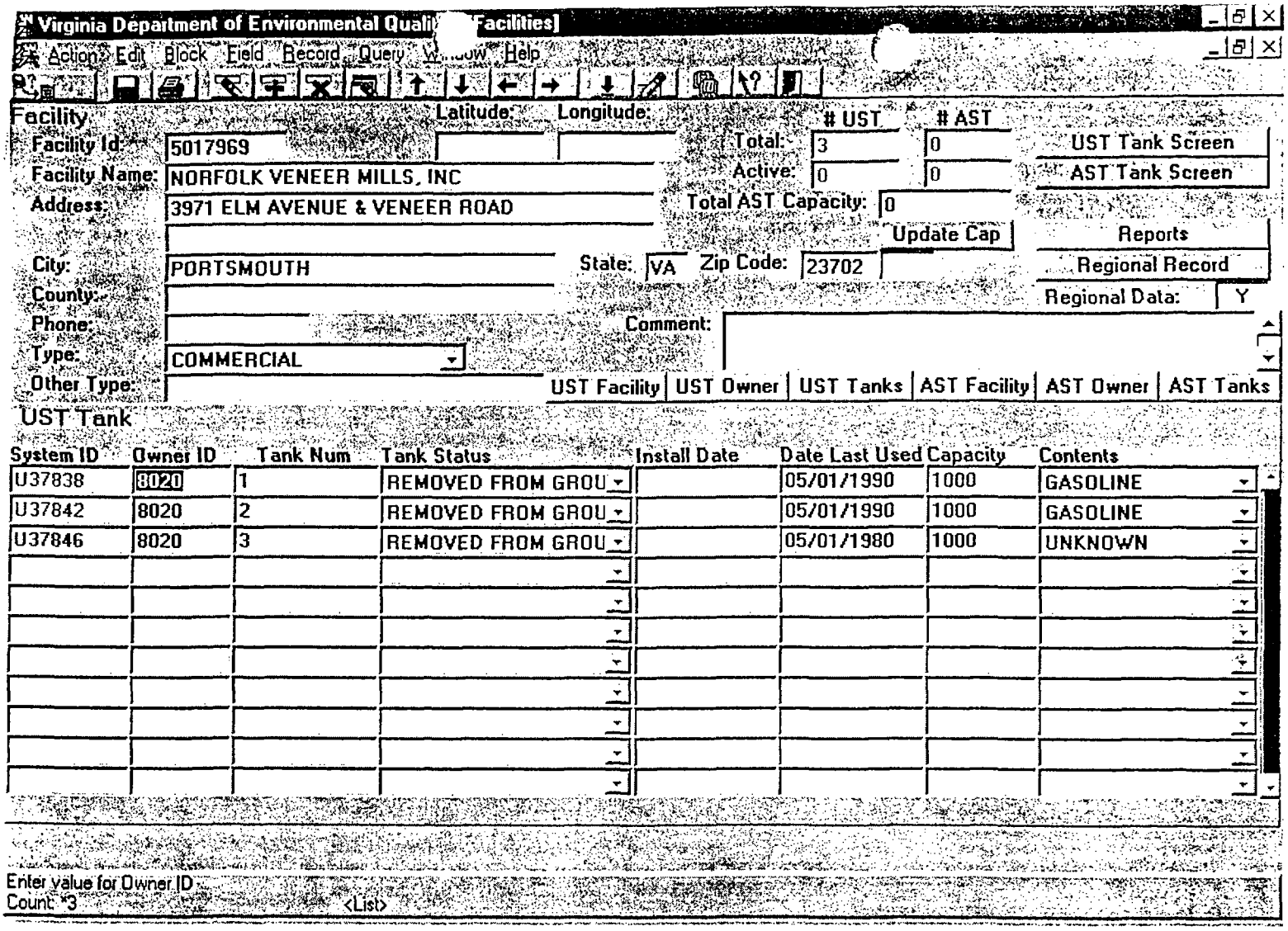
Many thanks.

Very truly yours,

Roger W. Stenersen
Plant Manager

RWS:sh

Enclosure


Virginia Department of Environmental Quali Facilities]
Action Edit Block Field Record Query Window Help
Facility
Latitude:
Longitude:
Facility Id: 5017969
Facility Name: NORFOLK VENEER MILLS, INC
Address: 3971 ELM AVENUE & VENEER ROAD
City: PORTSMOUTH
State: VA
Zip Code: 23702
County:
Phone:
Type: COMMERCIAL
Other Type:
Comment:
UST
AST
Total: 3 0
Active: 0 0
Total AST Capacity: 0
Update Cap
UST Tank Screen
AST Tank Screen
Reports
Regional Record
Regional Data: Y
UST Facility
UST Owner
UST Tanks
AST Facility
AST Owner
AST Tanks
UST Tank
System ID
Owner ID
Tank Num
Tank Status
Install Date
Date Last Used
Capacity
Contents
U37838 8020 1 REMOVED FROM GROU 05/01/1990 1000 GASOLINE
U37842 8020 2 REMOVED FROM GROU 05/01/1990 1000 GASOLINE
U37846 8020 3 REMOVED FROM GROU 05/01/1980 1000 UNKNOWN
Enter value for Owner ID
Count *3
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Virginia Department of Environmental Quality [Facilities]

Action Edit Block Field Record Query Window Help

Facility

				# UST	# AST	
Facility Id:	5017969	Latitude:	Longitude:	Total: 3	0	UST Tank Screen
Facility Name:	NORFOLK VENEER MILLS, INC			Active: 0	0	AST Tank Screen
Address:	3971 ELM AVENUE & VENEER ROAD			Total AST Capacity: 0		
					Update Cap	Reports
City:	PORTSMOUTH	State: VA	Zip Code: 23702			Regional Record
County:						Regional Data: Y
Phone:			Comment:			
Type:	COMMERCIAL					
Other Type:						

UST Facility | UST Owner | UST Tanks | AST Facility | AST Owner | AST Tanks

UST Facility Owners

Owner ID	Name	Certifier's Name	Title	Date Signed
8020	NORFOLK VENEER MILLS, INC	ROGER W. STENERSEN	PLANT MGR.	05/07/1986

UST Contacts

Contact Id	Name	Job Title	Work Phone
72973	ROGER W. STENERSEN		(804)393-2551

Enter value for Owner ID - list of values available
Count: *1 <List>

PURCHASE ORDER

Phone (804) 393-2551
Fax (804) 397-3397

NORFOLK VENEER MILLS, INC.

(Division of Universal Furniture, Ind.)
P. O. Box 2157
3971 Veneer Rd.
Portsmouth, Virginia 23702

No 7284

IMPORTANT,
PUT NUMBER OF THIS ORDER ON YOUR INVOICE, LIST AND PACKAGES.

To Remac USA, Inc.
212 Salters Creed Road
Hampton, VA 23661

SHIP TO

DATE	SHIP BY	TERMS	WANTED
3-15-95			

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	Removal of any non-hazardous liquids/sludges in tank		
	Removal of tank and backfill		
	All required testing and sampling		
	Priceing for contaminated soil and remediation		
	TOTAL		4,750.00

By: _____

Approved
By: Chris Rylke

1.0 Introduction

Environmental Resources Management, Inc. (ERM) conducted a site characterization at the locations of two former underground storage tanks (USTs) at the Norfolk Veneer Mills (NVM) wood veneering facility, 3971 Veneer Road, Portsmouth, Virginia (Figure 1-1). The site characterization assessed the extent, magnitude and potential impacts of any soil and ground water quality degradation resulting from the USTs, in fulfillment of the Virginia State Water Control Board (SWCB) UST regulations (VR 680-13-02). The elements of the site characterization are a site assessment, risk assessment and remediation assessment.

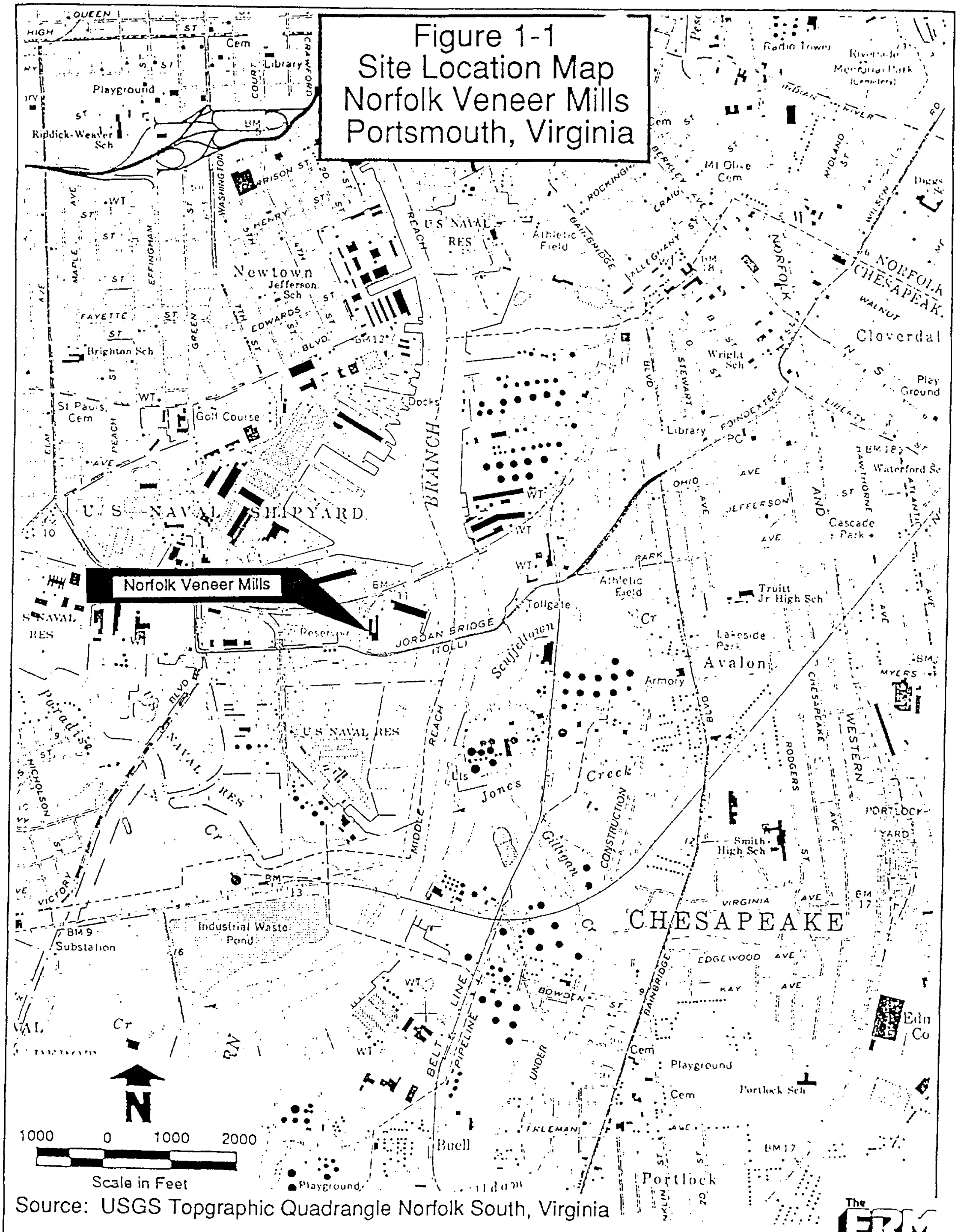
2.0 Background

2.1 Site Location and UST History

NVM is an active wood veneering facility, located west of the Southern Branch Elizabeth River in a heavily industrialized area of Portsmouth. A small tidal channel borders NVM to the south (Figure 2-1). Adjacent properties include Atlantic Wood Industries, Inc. (a lumber preservation facility), and the United States Naval Reservation.

At NVM, two USTs (UST 1 and UST 2) were located at separate on-site locations and used previously by NVM for the storage of gasoline. According to NVM, the tank and pump of UST 1 was installed and is owned by Century Petroleum. The former locations of USTs 1 and 2 are shown in Figure 2-1, labeled as pits 1 and 2, respectively. In May 1990, NVM retained W.B. Goode Company, Inc. to remove the USTs. Total petroleum hydrocarbons (TPH) were detected in soil samples collected from the bottom of each UST excavation, approximately nine feet deep. Maximum TPH concentrations of 542 parts per million (ppm) and 2,638 ppm were detected in the soil samples taken from pits 1 and 2, respectively. The SWCB notified NVM by letter dated 18 July 1990 that a site characterization study was required.

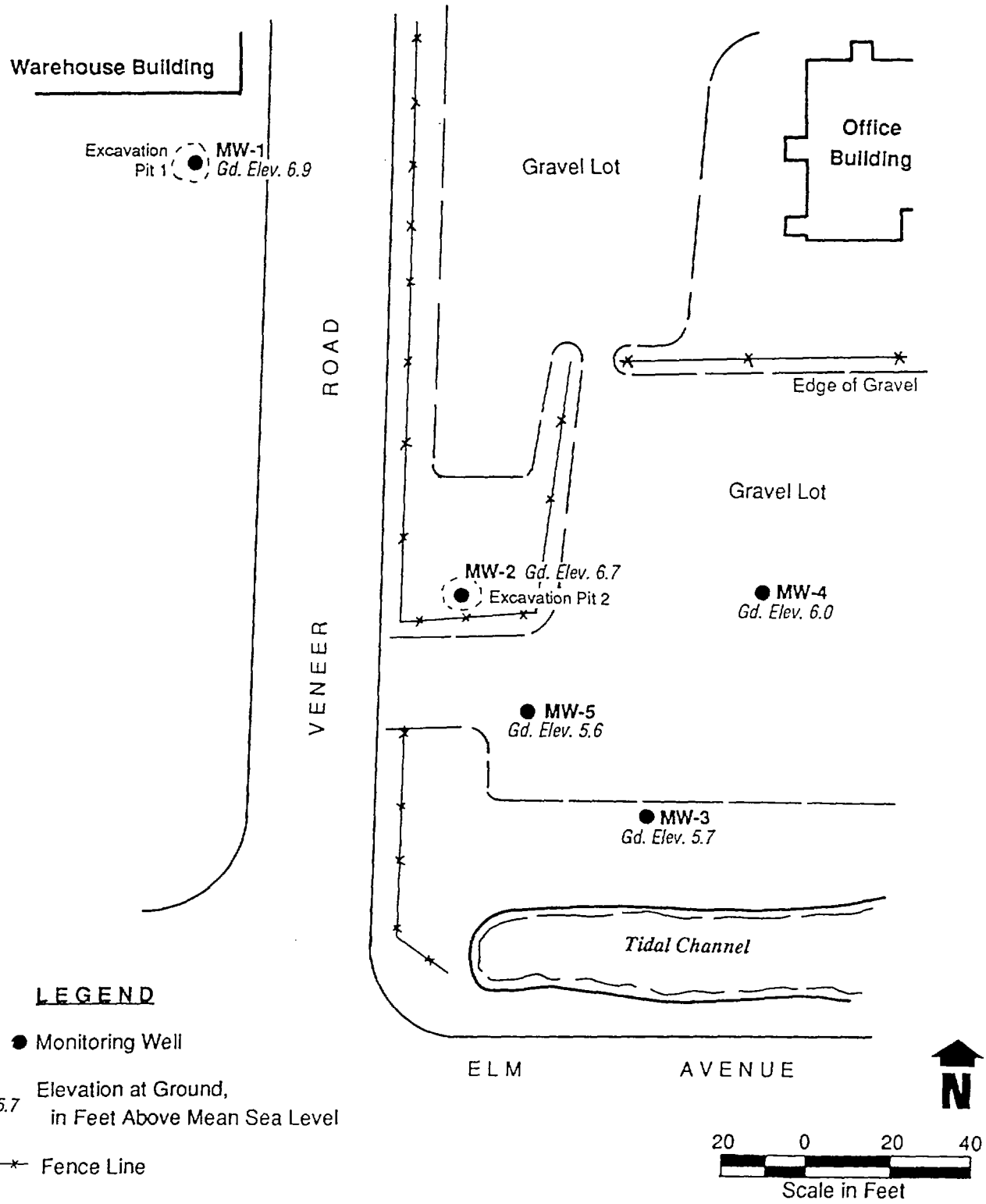
It is important to note that immediately south and west of NVM is the Atlantic Wood Industries property, a United States Environmental Protection Agency (USEPA) National Priorities List site (Superfund site). According to Carl Thomas of the SWCB, Atlantic Wood Industries



Source: USGS Topgraphic Quadrangle Norfolk South, Virginia

The ERM Group

Figure 2-1
Site Map
Norfolk Veneer Mills
Portsmouth, Virginia



LEGEND

MW- ● Monitoring Well

Gd. Elev. 5.7 Elevation at Ground, in Feet Above Mean Sea Level

Fence Line

WO# B0501	Drawn by / Date: E. Knopfle 10/15/90	Checked by / Date: D. Terry 10/15/90	The ERM Group
	Revised by / Date:	Checked by / Date:	

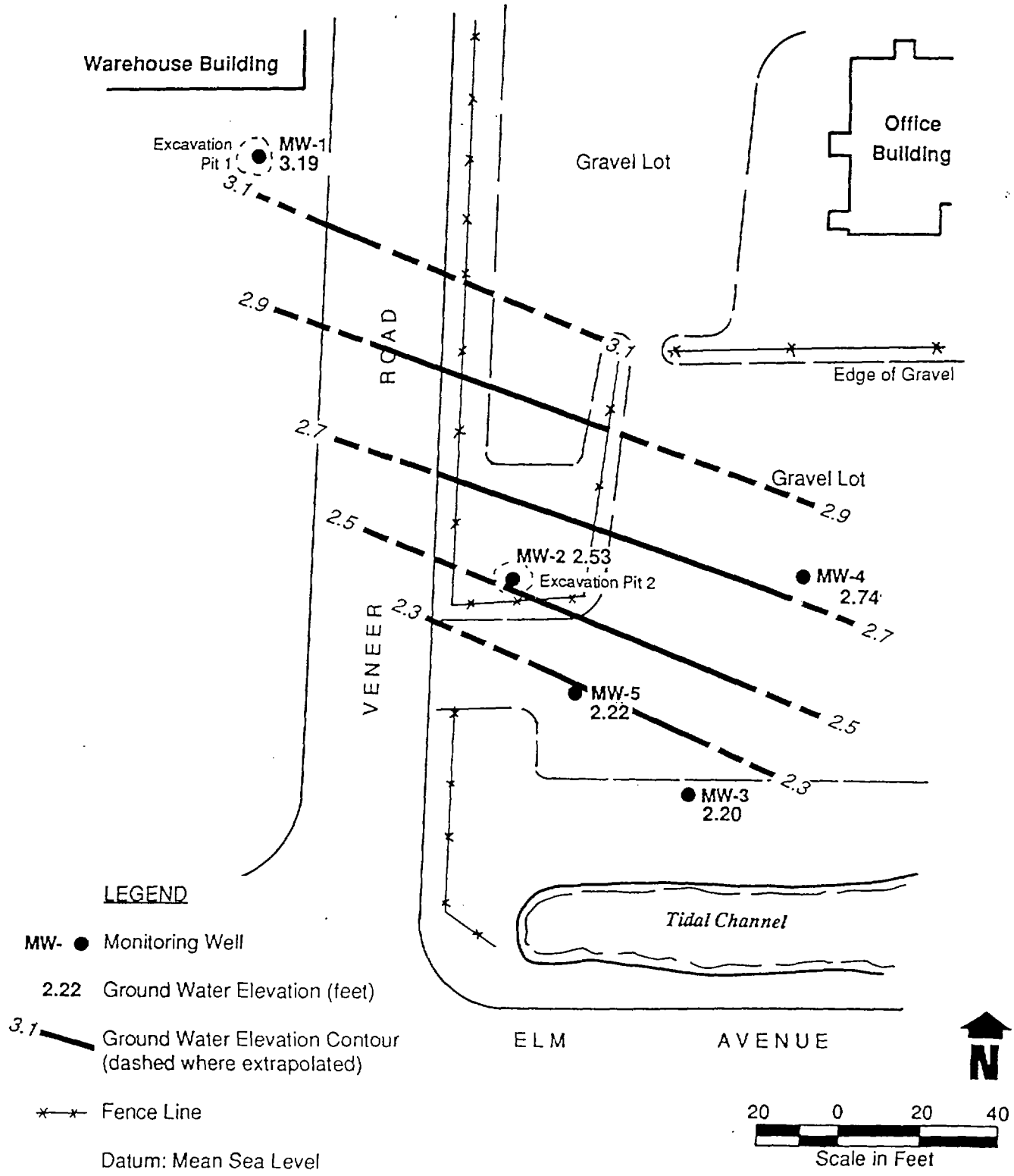
Table 3-2

Soil Sample Analytical Results Summary

Compound	MW-1 12 - 14 Feet	MW-2 8 - 10 Feet
BTEX µg/kg		
Benzene	N D	N D
Toluene	N D	N D
Ethylbenzene	129	N D
Total Xylenes	435	264
MTBE µg/kg	N D	N D

Concentrations represent dry weight basis.
ND denotes non-detected.
MW-1 soil sample collected from 12 - 14 feet.

Figure 3-2
Ground Water Elevation Contour Map
25 September 1990
Norfolk Veneer Mills
Portsmouth, Virginia



LEGEND

MW- ● Monitoring Well

2.22 Ground Water Elevation (feet)

3.1 Ground Water Elevation Contour (dashed where extrapolated)

Fence Line

Datum: Mean Sea Level

WO# B0501	Drawn by / Date: E. Knopfle 10/15/90	Checked by / Date: D. Terry 10/15/90	The ERM Group
	Revised by / Date: D. Grabowski 10/29/90	Checked by / Date: L. Rafalko 10/29/90	

Table 3-3

Ground Water Analytical Results Summary

Constituent	MW-1	MW-2	MW-3	MW-4	MW-5
BTEX (µg/L)					
Benzene	98	2	ND	ND	17
Toluene	61	ND	ND	ND	64
Ethylbenzene	108	5	ND	ND	85
Total Xylenes	588	8	ND	ND	252
MTBE µg/L	ND	ND	ND	ND	ND
TCL Semivolatiles µg/L (a)					
4-Methylphenol					56
Naphthalene					9400
2-Methylnaphthalene					2500
Acenaphthylene					41
Acenaphthene					970
Dibenzofuran					870
Fluorene					1200
Phenanthrene					5300
Anthracene					610
Carbazole					450
Fluoranthene					1300
Pyrene					1200
Benzo (a) anthracene					540
Chrysene					480
Benzo (b) fluoranthene					280
Benzo (k) fluoranthene					250
benzo (a) pyrene					290
Indeno (1,2,3-cd) pyrene					130
Dibenz (a,H)anthracene					41
Benzo (ghi) perylene					110

ND denotes not detected.
(a) Semivolatiles were analyzed in MW-5 sample only.

Table 3-1

Summary of Monitoring Well Construction Details

Well Number	Total Depth (feet)(a)	Screen Length (feet)	Screen Interval (feet)(a)	Elevation (feet)(b)
MW-1	17	15	2.0-17.0	10.27
MW-2	15	13	2.0-15.0	9.95
MW-3	12	10	2.0-12.0	8.37
MW-4	12	10	2.0-12.0	8.37
MW-5	12	10	2.0-12.0	9.14

(a) BLS denotes below land surface.
(b) Elevation of top of PVC, relative to mean sea level.

Additionally, water levels collected for a six hour period on 25 September indicate that the water table aquifer is not tidally influenced.

Lateral ground water flow velocities for the water table aquifer were estimated using a lateral hydraulic gradient calculated from the 25 September water level data and hydrogeologic parameters obtained from the literature. The lateral hydraulic gradient for the site, which is the rate of change of ground water elevation (hydraulic head) over distance, is approximately 0.01. The ground water flow velocity was estimated from the following equation (Fetter 1988)

$$V = (K/n) * i \qquad \text{(Equation 1)}$$

where, V is the estimated average linear ground water velocity, K is the saturated hydraulic conductivity, n is porosity and i is the hydraulic gradient, estimated as 0.01. Hydraulic conductivity and porosity were not measured in the field but were estimated for a silty sand lithology from the literature as 3.28×10^{-6} feet/second and 0.35, respectively (Fetter 1988). Using these values with Equation 1, the resulting ground water flow velocity estimated for the site is relatively low at approximately three feet per year.

Soil and Ground Water Quality

The results of the laboratory analyses of the soil samples are summarized in Table 3-2 (Appendix B). Only ethylbenzene and total xylenes were detected in the soil samples. For soil sample MW-1, ethylbenzene and total xylenes were detected at concentrations of 129 and 435 micrograms per kilogram (µg/kg) on a dry weight basis, respectively. Total xylenes were detected in the soil sample from MW-2 at a dry weight concentration of 264 µg/kg. The source of ethylbenzene and xylene in the soil at MW-1 and MW-2 is most likely from gasoline stored in the former USTs. Non-detections of benzene, toluene and MTBE suggests that these lighter, more volatile constituents have volatilized and dissipated from the soil.

Table 3-3 summarizes the analytical ground water results (Appendix B). MTBE was not detected in any of the ground water samples. BTEX compounds were detected at MW-1 and MW-5. At MW-2, benzene,

ethylbenzene, and total xylenes were detected at very low concentrations approaching the limits of instrument detection. BTEX compounds were not detected at MW-3 and MW-4. As noted previously, free product (NAPL) was not detected in any of the ground water monitoring wells.

The ground water quality results coupled with the soil gas survey indicate that ground water quality degradation resulting from gasoline leakage at former USTs 1 and 2 is limited in extent. At UST 1, the detections of BTEX compounds in the ground water confirm degradation by gasoline. The extent, however, appears to be limited to the immediate vicinity of the excavation as evidenced by the rapid decreases in the soil gas concentrations. At UST 2, no significant ground water concentrations were detected.

At MW-5, BTEX and semi-volatile compounds were detected (Table 3-3). It is unlikely that the former USTs were the source of these constituents for two reasons. First, no significant concentrations of BTEX were detected in MW-2, located at the site of the former UST 2. Second, the semi-volatile compounds detected at MW-5 are not indicative of gasoline but of a heavier hydrocarbon fraction, possibly creosote. The presence of these semi-volatiles suggests that the source of BTEX in MW-5 is probably associated with the semi-volatile source and not associated with gasoline leaked from UST 2. Khoa Nguyen with the Virginia Department of Waste Management confirmed that several of the semi-volatile compounds detected at MW-5, including anthracene, pyrene, napthalene, chrysene, and fluoranthene, are present in the ground water at the neighboring Atlantic Wood Superfund site. This evidence suggests that the source of ground water degradation at MW-5 is not related to the former USTs at NVM and may be associated with the Atlantic Wood Superfund site.

4.0 Risk Assessment

The most likely migration pathway for human health and natural resources exposure is through ground water transport in the water table aquifer of dissolved BTEX compounds. Potential exposure to human health due to soil quality degradation at each former UST location does not warrant concern because each location is backfilled and covered to land surface with soil, and the areas, in general, are covered either by a compacted gravel surface or grass.

is a lumber preservation facility at which creosote and associated organic compounds have degraded soil and ground water quality. Given the close proximity of the Atlantic Wood Superfund site to NVM and the lengthy operational history of the Atlantic Wood facility, it is possible that organic compounds originating from the Superfund site could be migrating onto NVM property.

2.2 Site Physical Setting

The NVM plant is located in the Atlantic Coastal Plain Physiographic Province. Typically, the surface deposits consist of unconsolidated sand, silt, and gravel deposits of the Pleistocene age Columbia Group (Siudyla *et al.* 1981). Fill material has also been mapped near the south edge of the NVM property, parallel to Elm Avenue (Barker and Bjorken 1978).

Depth to ground water in the area varies from less than one foot to about eight feet. Ground water recharge by precipitation to the water table aquifer is estimated at 12 to 20 inches per year (Siudyla and others, 1981). Generally, the water table configuration reflects local topography, flowing from topographic highs to topographic lows. Reported transmissivity values range from 1,400 gallons per day per foot (gpd/ft) to 2,600 gpd/ft (Siudyla *et al.* 1981). According to well records provided by the SWCB, the water table aquifer is not used as a water supply source within a radius of at least one mile from NVM.

3.0 Site Assessment

The site assessment was conducted to assess the extent and magnitude of soil and ground water quality degradation resulting from any release of gasoline into the subsurface from the two former on-site USTs. Activities included a soil gas survey, the installation of five ground water monitoring wells, and the collection of soil and ground water samples for laboratory analyses.

3.1 Soil Gas Survey

A soil gas survey was completed to provide preliminary delineation of the lateral extent of any soil and ground water quality degradation around the former locations of the two USTs. These survey results were used to select the ground water monitoring well locations. The soil gas survey used a Photovac Microtip photoionization detector (PID) organic vapor analyzer (OVA) connected to polyvinylchloride (PVC) soil gas probes to detect total volatile organic vapors in the unsaturated zone soils. Ten and thirteen survey locations were completed around the excavations of former USTs 1 and 2, respectively (Figure 3-1). The results of the soil gas survey are shown in Figure 3-1. At both locations, the survey was directed in a southerly direction, dictated by the soil gas concentrations. The northern edge of the tidal channel was the survey limit around former UST 2.

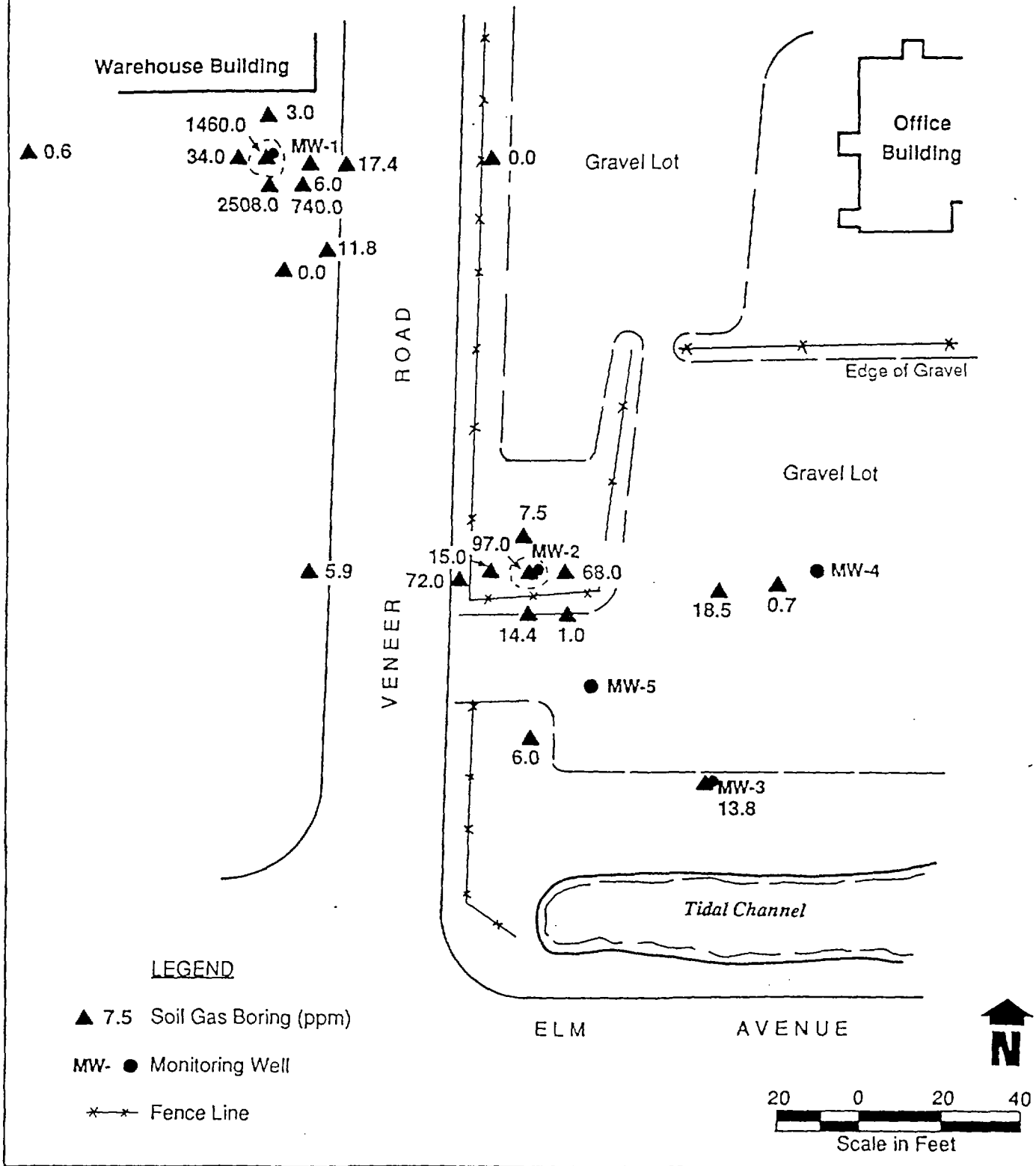
At the former location of UST 1 the results indicated limited soil and ground water degradation. A maximum concentration of 2,508 ppm total organic vapors was detected 10 feet south of the center of the excavation pit (Figure 3-1). Outward from the former UST, soil gas concentrations decreased rapidly to 0.0 ppm at a location 30 feet south and less than one ppm about 50 feet west of the former excavation. Along the eastern fringe of the pit, the soil gas concentrations decreased to 17.4 ppm.

The survey results also indicated a limited area of potential soil and ground water degradation at former UST 2. The maximum soil gas concentration was 97 ppm at the center of the former excavation pit (Figure 3-1). To the east, the concentrations decreased to less than one ppm within a distance of about 75 feet. To the south, the concentrations decreased to 13.8 ppm within 65 feet. The soil gas concentrations decreased to about six ppm within a distance of about 60 feet to the west and southwest.

3.2 Ground Water Monitoring Well Installations

Five ground water monitoring wells (MW-1 through MW-5) were installed on site in the water table aquifer (Figure 2-1) in the area that the soil gas survey indicated as potentially impacted by gasoline leakage from the former USTs. Wells MW-1 and 2 were installed at the former locations of UST 1 and UST 2, respectively. Well MW-3 was

Figure 3-1
Approximate Location and Concentration of Soil Gas Borings
Norfolk Veneer Mills
Portsmouth, Virginia



WO# B0501	Drawn by / Date: E. Knopfle 10/15/90	Checked by / Date: D. Terry 10/15/90	The ERM Group
	Revised by / Date: D. Grabowski 10/29/90	Checked by / Date: L. Rafalko 10/29/90	

installed south of former UST 2, along the southern property boundary of NVM. MW-4 was installed east of former UST 2, about 10 feet beyond the soil gas survey location that registrered less than one ppm. Between monitoring wells MW-2 and MW-3, MW-5 was installed.

The monitoring wells ranged in depth from 12 to 17 feet, with each well screen interval constructed across the water table to detect the possible presence of floating non-aqueous phase hydrocarbons (free product). Each well was installed by hollow stem auger. Split spoon soil samples were collected continuously until the water table was encountered, with at least one sample collected below the water table. Each soil sample was visually inspected by the ERM hydrogeologist and a boring log constructed (Appendix A). The OVA was used to field screen each soil sample for total organic vapors.

The monitoring well construction details are summarized in Table 3-1. Each well was constructed inside the augers with two-inch inner diameter Schedule 40 threaded flush-joint PVC riser pipe and machine slotted 0.010-inch well screen. A sand pack was installed around each screen to about one foot above the top of the screen, followed by a bentonite slurry. Each well was completed with a locking protective surface casing emplaced in a cement slurry. Each well was developed by centrifugal pump and manual surging for about one-half to one hour.

All drilling equipment and PVC well materials were steam cleaned prior to use and between each well location. The split spoons were washed with Alconox® and rinsed with distilled water between each soil sample. Each monitoring well was surveyed by a Virginia licensed surveyor to determine the horizontal locations, and vertical elevations relative to mean sea level and accurate to within 0.01 feet.

3.3 Soil and Ground Water Sampling

Soil and ground water samples were submitted to Gulf States Analytical, Inc., Houston, Texas, for laboratory analyses of benzene, toluene, ethylbenzene, xylenes (BTEX scan) and methyl tertiary butyl ether (MTBE). These compounds were selected as indicators of gasoline. Total Petroleum Hydrocarbons (TPH) was not considered a reliable indicator due to potential ground water degradation associated with the neighboring Atlantic Wood Superfund site. For the soil analyses, BTEX and MTBE were analyzed by USEPA methods SW-846 8020 and SW-846 800, respectively. For the ground water analyses,

BTEX and MTBE were analyzed by USEPA methods 602 and SW-846 800, respectively. Because a non-aqueous phase hydrocarbon was encountered in the soils during the installation of MW-5, an additional ground water sample was submitted from this well for Target Compound List (TCL) semi-volatile analyses by USEPA method 625.

The soil samples were collected from MW-1 and MW-2 at sampling depth intervals of 12 to 14 feet and 8 to 10 feet, respectively. These locations were selected for soil sampling because the degree of soil quality degradation due to gasoline leakage was expected to be the greatest. The specific depth intervals were selected based on the total organic vapor concentrations detected by the OVA and the proximity of the sampling interval to ground water saturated soils, as discerned in the field. Prior to ground water sampling, each well was purged of three wetted well casing volumes using dedicated PVC bailers. Ground water sampling was completed using new, clean dedicated PVC bailers. The soil and ground water samples were stored in coolers and chilled to 4°C. Delivery was by overnight express. Strict chain-of-custody procedures were followed (Appendix B).

In addition, prior to ground water sampling, the potential presence of floating non-aqueous phase liquids (NAPL) was determined for each monitoring well using an optical intrerface probe. The optical intrerface probe detected no floating NAPL.

3.4 Results and Discussion of the Site Assessment

Site Geology and Ground Water Flow Conditions

The subsurface soils consisted mostly of silty fine sands and fill materials. A discontinuous clay layer was encountered in MW-2 and MW-4 at a depth of approximately 10 feet. A non-aqueous phase hydrocarbon was observed in soils encountered at MW-2, 3, and 5 at depths of about four, six and eight feet, respectively. Because gasoline is a light petroleum hydrocarbon fraction and would dissipate upon release to the environment, it is unlikely that this non-aqueous material is gasoline derived.

Ground water levels for the water table aquifer were collected from the monitoring wells on 25 September 1990 and plotted on Figure 3-2 to prepare a ground water elevation contour map. From Figure 3-2 it is evident that ground water flow occurs to the south-southwest.

The potential magnitude of risk posed to human health and natural resources from ground water quality degradation due to the former USTs is evaluated by comparing the maximum ground water concentrations of BTEX detected at monitoring wells MW-1, 2, 3, and 4 to regulatory standards of drinking water maximum contaminant levels (MCLs) and ambient water quality criteria (Table 4-1). Based on this comparison, only benzene exceeds either the MCL or ambient water quality criteria. The maximum concentrations of toluene, ethylbenzene and total xylenes are all well below the regulatory standards. Potential risks to on- and off-site receptors are discussed below.

Potential On-Site Receptors

Ground water is not used as a supply of potable water at NVM. Potable water is obtained through the Portsmouth municipal water supply system. Therefore, no risk is presented on site to human health from ground water quality degradation due to the former USTs.

Potential Off-Site Receptors

Potential off-site ground water receptors are limited to those located hydraulically downgradient of the former UST locations. The site assessment determined that ground water in the water table aquifer flows in a southerly direction, limiting potential off-site receptors to the south of NVM.

A review of State well records provided by the SWCB show that the water table aquifer is not used as a water supply source (within a minimum one-mile radius of the NVM facility). Therefore, the potential risk posed to human health from the consumption of ground water from the water table aquifer does not warrant concern. In fact, the only ground water user identified within a one-mile radius of NVM was the United States Naval Reservation located in Portsmouth. The water supply well at the Naval Reservation is constructed with a well screen interval beginning at a depth greater than 700 feet below the land surface. Due to the depth of this well, and the occurrence of intervening confining layers consisting of clay and silt deposits that exist between the water table and the deeper aquifer used by the Naval

Reservation, the potential risk to human health from ground water degradation at NVM does not warrant concern.

Similarly, the potential risks posed to natural resources located downgradient of the USTs do not appear to warrant concern. The natural resource at greatest risk (due to its proximity to the former UST locations) is the small tidal channel located along Elm Avenue (Figure 2-1), cross gradient from UST 1 and downgradient from UST 2. It is probable that this channel receives ground water discharge from the water table aquifer. However, the potential risk to this surface water does not appear to be a concern as benzene was not detected in the ground water monitoring well (MW-3) furthest downgradient from the former USTs and closest to the channel (approximately 20 feet).

5.0 Remediation Assessment

The two USTs were removed from the property in May 1990. Therefore, potential remediation requirements are limited to the affected soils and ground water that might remain at the sites of the USTs. The results of the site investigation indicate there is no non-aqueous phase hydrocarbons (free product) floating on the water table at the site. Similarly, concentrations of gasoline indicator constituents in soil and ground water samples collected from the UST locations are relatively low, indicating that the remaining soils likely do not represent a significant continuing source of ground water degradation. Therefore, remediation of affected soils is not considered necessary.

Significant levels of BTEX were detected in ground water samples from only two of the wells installed in the investigation, wells MW-1 and MW-5. However, as indicated in this assessment, the affected ground water appears to be of very limited extent and does not appear to present any significant risk to downgradient receptors. The presence of semi-volatile compounds, indicative of creosote contamination not associated with the USTs, in the groundwater at MW-5 would complicate any ground water treatment options that might be employed to remediate affected ground water. Pumping to recover the relatively small quantities of gasoline constituents from the water table aquifer would likely promote the further migration of creosote constituents onto the property.

6.0 Conclusions

Our conclusion, based on the data collected in this investigation is that no further action should be required with respect to the UST sites. This recommendation is based on the relatively low levels of gasoline constituents detected in the ground water, the limited extent of the affected ground water, the lack of vulnerable receptors, and the presence of contaminants from other sources.

REFERENCES

Barker, W. J., E. Bjorken. 1978. Geology of the Norfolk South Quadrangle, Virginia. Publication 9, Virginia Department of Conservation and Economic Development, Division of Mineral Resources.

Fetter, C. W. 1988. Applied Hydrogeology Second Edition, Columbus, Ohio, Merrill Publishing Company.

Siudyla, E. A., A. May, P. Hawthorne. 1981. Ground Water Resources of the Four Cities Area, Virginia. Tidewater Regional Office, Virginia State Water Control Board, Bureau of Water Control Management, Richmond Virginia, Planning Bulletin 331.

Table 4-1

Ground Water Concentrations vs. Appropriate Regulatory Standards

Constituent	Maximum Detected Concentration (µg/L)	MCL(a) (µg/L)	Ambient Water Quality Criteria (µg/L) (b)
Benzene	98	5	0.66
Toluene	61	2000	5000
Ethylbenzene	108	700	430
Total Xylenes	588	10000	-

(a) Drinking Water Standard Maximum Contaminant Level.
(b) Ambient Water Quality Criteria shown are the most stringent from chronic and acute standards for human or aquatic protection.
Surface water or bioaccumulation standards do not exist for xylenes.

APPENDIX A

Boring Logs

Norfolk Veneer Mills

Environmental Resources Management

Project MASCO-NVM Owner

Location Portsmouth, VA W.O. No.: B0501-00-01

Well No.: MW-1 Total Depth 17' Diameter 6"

Surface Elevation Water Level

Screen Dia. 2" Length 15' Slot Size 0.010 in.

Casing Dia. 2" Length 2' Type PVC

Drilling Company Hurdis Drilling Drilling Method Hollow Stem Auger

Driller Ned Hurdis Log By D. Terry Date Drilled 9/19/90

Sketch Map

Notes: Sample S2A auger brought up black, wet, SAND, petroleum soaked 44 ppm from approx. 2.5 - 3'.

Depth (Feet)	Graphic Log	Well Construction	Sample Number and Depth	Description/Soil Classification (Color, Texture, Structures)
0			S-1 (0 - 2')	0 -9" white, moist, SAND, (fill) 9 -18" gray to black, moist, fine SAND, little organic matter, little organic mottling, (2,2,1,1), (9.1 ppm).
1				
2				
3			S-2 (2-4')	0 -3" black, moist, SAND, petroleum odor, (1), (81.0 ppm). Driller noted very moist at 3 - 4'.
4				
5				
6			S-3 (4-6')	0 - 2" white, moist, fine, SAND, (fill), (1,1,1,1), (0.0 ppm).
7				
8			S-4 (6-8')	0 - 8" gray, wet, SAND, some silt, petroleum odor, 8 - 12" dark brown, moist, organic rich PEAT, 12 - 20" gray, moist, fine, SAND, some clay, little silt, high organic matter, (16.0 ppm).
9				
10				
11			S-5 (8-10')	No recovery.
12				
13			S-6 (10-12')	0 - 12" tan to gray, wet, SAND, (0.0 ppm). Hit water at approx. 11'. (Approx. 1/2" diameter wood pieces).
14				
15				
16			S-7 (12-14')	0 - 7" gray, wet, fine, SAND, little silt, some organic matter, wood chunks, (6.5 ppm).
17				
18			S-8 (14-17')	0 - 36" gray, very wet, SAND, some silt, (0.0 ppm). (Note: Driller said there was approx. 5" of heave).
19				
20				Bottom of boring at 17'.
21				Well Construction:
22				Screen interval: 2' to 17' Sand pack: 1.5' to 17' Grout: Surface to 1'6"

Environmental Resources Management

Project MASCO-NVM Owner

Location Portsmouth, VA W.O. No.: B0501-00-01

Well No.: MW-2 Total Depth 16' Diameter

Surface Elevation Water Level

Screen Dia. 2" Length 13' Slot Size 0.010 in.

Casing Dia. 2" Length 2' Type PVC

Drilling Company Hurdis Drilling Drilling Method Hollow Stem Auger

Driller Ned Hurdis Log By D. Terry Date Drilled 9/19/90

Sketch Map

Notes:

Depth (Feet)	Graphic Log	Well Construction	Sample Number and Depth	Description/Soil Classification (Color, Texture, Structures)
0			S-1 (0 - 2')	0 - 17" tan and black, moist, SAND, trace gravel, some orange mottling, high organic matter in black sand, (1-1-1-1), (0.0 ppm).
1				
2				
3			S-2 (2-4')	0 - 10" tan and orange, mottled, moist, SAND, (0.0 ppm).
4				
5			S-3 (4-6')	0 - 17" gray to black, wet, SAND, little gravel, (100.0 ppm). Lower 1' has evidence of petroleum-sheen and strong petroleum odor.
6				
7			S-4 (6-8')	0 - 4" black, wet, SAND, little gravel 4 - 12" gray, moist, CLAY, trace sand, trace silt, (36.0 ppm).
8				
9			S-5 (8-10')	0 - 10" black,very wet, SAND, some silt, some roots 10 - 24" dark gray, CLAY, trace sand, strong petroleum odor, (38.7 ppm).
10				
11			S-6 (10-12')	0 - 3" black, wet, SAND, some gravel, petroleum odor 3 - 24" dark gray, moist, CLAY, trace sand, (20.6 ppm).
12				
13			S-7 (12-14')	0 - 24" dark gray, moist, CLAY, little sand, trace brown mottling, little odor, (7.8 ppm).
14				
15				
16				Bottom of boring at 14'.
17				
18				Well Construction:
19				Screen interval: 2' to 15' Sand pack: 1.5' to 15' Grout: Surface to 1'4"
20				
21				
22				

Environmental Resources Management

Project: MASCO-NVM — Owner:
Location: Portsmouth, VA — W.O. No.: B0501-00-01
Well No.: MW-3 — Total Depth: 12' — Diameter: 6"
Surface Elevation: — Water Level:
Screen Dia: 2" — Length: 10' — Slot Size: 0.010 in.
Casing Dia: 2" — Length: 2' + 3' stickup — Type: PVC
Drilling Company: Hurdis Drilling — Drilling Method: Hollow Stem Auger
Driller: Ned Hurdis — Log By: D. Terry — Date Drilled: 9/20/90

Sketch Map

Notes:
MW-3 located approx. 6' west of T-10, tide appears to be near high.

Depth (Feet)	Graphic Log	Well Construction	Sample Number and Depth	Description/Soil Classification (Color, Texture, Structures)
0			S-1 (0 - 2')	0 - 9" black, moist, SAND, some gravel, trace coal, (fill), (6-5-2-2), (0.2 ppm).
1				
2				
3			S-2 (2-4')	0 - 10" black, moist, SAND, some silt,
4				10 - 15" gray, moist, fine, SAND, little gravel, some silt, faint petroluem odor, (3-8-7-6), (0.9 ppm).
5				
6			S-3 (4-6')	0 - 13" black and gray, wet, fine SAND, some silt, little wood parts, trace clay, very faint odor of petroleum, (0.2 ppm).
7				
8			S-4 (6-8')	0 - 7" gray, wet, SAND
9				7 - 8" petroleum soaked PEAT
10				8 - 17" gray, wet, SAND
11				17 - 19" wood, petroleum odor evident, (2-2-2-10), (1.1 ppm).
12			S-5 (8-10')	0 - 12" gray, wet, SAND, some silt, visible petroleum sheen, odor
13				12 - 15" wood, (4-3-1-5), (4.0 ppm).
14			S-6 (10-12')	No recovery
15				
16				Bottom of boring at 12'.
17				
18				Well Construction:
19				Screen interval: 2' to 12'
20				Sand pack: 1.5' to 12'
21				Grout: Surface to 1'7"
22				

Drilling Log

Environmental Resources Management

Project: MASCO-NVM Owner:
Location: Portsmouth, VA W.O. No.: B0501-00-01
Well No.: MW-4 Total Depth: 12' Diameter:
Surface Elevation: Water Level:
Screen Dia. 2" Length 10' Slot Size 0.010 in.
Casing Dia. 2" Length 2' + 3.5' stickup Type PVC
Drilling Company Hurdis Drilling Drilling Method Hollow Stem Auger
Driller Ned Hurdis Log By D. Terry Date Drilled 9/20/90

Sketch Map

Notes:

Depth (Feet)	Graphic Log	Well Construction	Sample Number and Depth	Description/Soil Classification (Color, Texture, Structures)
0			S-1 (0 - 2')	0 - 6" black, dry, GRAVEL, some sand 6 - 12" gray, moist, CLAY, little shell material, (7-3-4-5), (0.0 ppm).
3			S-2 (2-4')	0 - 12" gray to green, moist, CLAY, some sand, little silt 12 - 16" light gray, moist, SAND, (4-5-10-10), (0.0 ppm).
5			S-3 (4-6')	0 - 24" BACKFILL, GRAVEL, some clay, wood chunks, little sand, (wood smelled like petroleum - maybe treated wood), (5-3-3-3), (0.0 ppm).
7			S-4 (6-8')	0 - 24" black, wet, SAND and GRAVEL, (Hit water at 7'), (4-4-1-1).
9			S-5 (8-10')	0 - 3" black, wet, WOOD, (petroleum odor) 3 - 9" gray, wet, SAND, trace petroleum-like material, (0.0 ppm).
11			S-6 (10-12')	0 - 24" gray, wet, SAND and CLAY, (probably top of clay lens found in MW-2), (0.0 ppm).
15				Bottom of boring at 12'.
17				Well Construction: Screen interval: 2' to 12' Sand pack: 1.5' to 12' Grout: Surface to 1'5"
22				

Environmental Resource Management

Project: MASCO-NVM — Owner:
Location: Portsmouth, VA — W.O. No.: B0501-00-01
Well No.: MW-5 — Total Depth: 12' — Diameter:
Surface Elevation: — Water Level:
Screen Dia: 2" — Length: 10' — Slot Size: 0.010 in.
Casing Dia: 2" — Length: 2' + 3.5' stickup — Type: PVC
Drilling Company: Hurdis Drilling — Drilling Method: Hollow Stem Auger
Driller: Ned Hurdis — Log By: D. Terry — Date Drilled: 9/20/90

Sketch Map

Notes:

Depth (Feet)	Graphic Log	Well Construction	Sample Number and Depth	Description/Soil Classification (Color, Texture, Structures)
0			S-1 (0 - 2')	0 -10" gray, dry, SAND and SHELLS, some gravel, (0.0 ppm).
1				
2				
3			S-2 (2-4')	0 - 15" gray, brown, mottled, moist, SAND, some gravel, little silt
4				15 - 19" gray, wet, SAND, (0.0 ppm).
5			S-3 (4-6')	0 - 8" brown, dry, SAND and SHELLS
6				8 - 13" gray-green, wet, SAND, (0.0 ppm).
7			S-4 (6-8')	0 - 4" gray-green, wet, SAND
8				4 - 6" WOOD, petroleum odor, (4-2-1-2), (0.0 ppm).
9			S-5 (8-10')	0 - 24" wet, petroleum odor, (appears to be creosote), visible
10				brown creosote liquid, also sheen, SAND, wood pieces, (95.0 ppm).
11			S-6 (10-12')	0 - 24" gray and brown, stained, SAND, (creosote-like liquid
12				visible), (3-3-2-1), (120.0 ppm).
13				
14				Bottom of boring at 12'.
15				
16				Well Construction:
17				
18				Screen interval: 2' to 12'
19				Sand pack: 1.5' to 12'
20				Grout: Surface to 1'5"
21				
22				

APPENDIX B

Chain-of-Custody and Laboratory
Analytical Results
Norfolk Veneer Mills

DGL -> DEB

M E M O R A N D U M

STATE WATER CONTROL BOARD--TIDEWATER REGIONAL OFFICE

R E G U L A T O R Y S E R V I C E S S E C T I O N

Pembroke Two - Suite 310 Virginia Beach, VA 23462

SUBJECT: Review of LUST Report Submitted by Norfolk Veneer Mills, Portsmouth

TO: DEB

FROM: CDL

DATE: October 16, 1991

COPIES: DGK

Received a telephone call from Mr. Roger Stensersen of the subject company on this date. The purpose of the call was primarily what to do with the requirements concerning stormwater runoff permitting (gave him Tuxford's number). He then asked what happened with the LUST related report that was submitted by the company back in September 27, 1990. He questioned why the regulations specify a rapid turn around (30 days) but review has yet to be done and returned to the company for further action if necessary. The company has several wells which have been ignored for several months and Mr. Stenersen is worried about their condition if they are to be used again.

I attempted to explain the staffing difficulties with the Groundwater Section of the TRO, but I feel that this may not have been enough. Is there any status report that can be provided to the company or a final report prepared which can be sent to them? Thought you would like to know.

10/16/91

DEB,

Anything significant re. this case?

DGK

Attachment B

SCOPE OF WORK

UST REMOVAL SERVICES FOR NORFOLK VENEER MILLS, PORTSMOUTH, VA

PROPOSAL # RT2-95026

REMAC® USA, INC. is pleased to present this proposal for UST removal and potential soil remediation for the above-mentioned site. This scope of work is based upon conversations with Mr. Gina Dixon of E.R.M., as well as, a site inspection on March 1, 1995 by Mr. Michael Roach. Our inspection revealed one (1) UST located on the property. Based upon historical data and existing site conditions, we assume the following tank characteristics:

TANK #	SIZE	CONTENTS/USE
1	1,000 GL	Diesel

Our quote includes all labor and materials necessary to remove and dispose of the UST, approximately thirty feet of product lines, as well as, restore the site to its original condition. Due to the unknown conditions, our price is based on reusing the excavated soil, and providing enough soil to match the volume of the tank. We have included a price for soil remediation, if it becomes necessary. All required closure samples (three analyzed for Method 8015, 24 hr turn-around) and reports will also be provided. Due to the unknown dimensions of the tank, it is impossible to determine the gallonage of material that exists until it is pumped out. For this reason, we have included a unit price for the removal and disposal of non-hazardous liquids from the tank. Environmental Resource Management will serve as the Quality Assurance Representative for the removal of the tank.

- Tank #1 ..... $4,750.00 Lump Sum
- Non-hazardous liquid removal and disposal ..... $.50/GL
  (minimum order is $100.00)
- Contaminated soil removal, disposal, and replacement.....$105.00/CY
  (off-site incineration)

Received 11-13-90

SITE CHARACTERIZATION REPORT
NORFOLK VENEER MILLS
Portsmouth, Virginia

7 November 1990

Prepared for:

Norfolk Veneer Mills

Portsmouth, Virginia 23702

Prepared by:

Environmental Resources Management, Inc.

808 Moorefield Park Drive, Suite 120

Richmond, Virginia 23236

and

116 Defense Highway, Suite 300

Annapolis, Maryland 21401

File No.: B0501-00-01

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Owner Name (from Section I) _____ Location (from Section II) _____ Page No. ____ of ____

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No.	Tank No.	Tank No.	Tank No.	Tan
1. Status of Tank (Mark all that apply ☒)					
Currently in Use	☐	☐	☐	☐	☐
Temporarily Out of Use	☐	☐	☐	☐	☐
Permanently Out of Use	☒	☒	☐	☐	☐
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	UNKnown	UNKNOWN			
3. Estimated Total Capacity (Gallons)	1000	1000			
4. Material of Construction (Mark one ☒)					
Steel	☒	☒	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	_____	_____	_____	_____	_____
5. Internal Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☒	☒	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	_____	_____	_____	_____	_____
6. External Protection (Mark all that apply ☒)					
Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☒	☒	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	_____	_____	_____	_____	_____
7. Piping (Mark all that apply ☒)					
Bare Steel	☐	☐	☐	☐	☐
Galvanized Steel	☒	☒	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify	_____	_____	_____	_____	_____
8. Substance Currently or Last Stored In Greatest Quantity by Volume (Mark all that apply ☒)					
a. Empty	☐	☐	☐	☐	☐
b. Petroleum					
Diesel	☐	☐	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☒	☒	☐	☐	☐
Used Oil	☐	☐	☐	☐	☐
Other, Please Specify	_____	_____	_____	_____	_____
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance	_____	_____	_____	_____	_____
OR					
Chemical Abstract Service (CAS) No.	_____	_____	_____	_____	_____
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)	Removed				
a. Estimated date last used (mo/yr)	5 / 90	5 / 90	/	/	
b. Estimated quantity of substance remaining (gal.)	NONE	NONE			
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

AR303677

☆ U.S. Government Printing Office 1986—496-735

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REPORT OF
SITE ASSESSMENT
FOR
TANK CLOSURE

Date: May 30, 1990

Prepared for: Norfolk Veneer Mills

Prepared by: W. B. Goode Co. Inc. Environmental services Division Chesapeake

W.B.GOODE
Company, Inc.

May 30, 1990

Mr. Rodger Stenersen
Norfolk Veneer Mills
3971 Veneer Road
Portsmouth, Virginia 23402

RE; UST closure at Norfolk Veneer Mills

Dear Mr. Stenersen:

Please find the enclosed report of underground storage closure prepared for your site on Veneer Rd. Portsmouth. This assessment has been conducted in accordance with guidelines listed in the Virginia State Water Control Board Regulations for UST systems of October 1989, and Federal UST Regulations 40 CFR Part 280 sub part G.

If you have any questions concerning this report please contact me at (804) 547-7191.

Sincerely,

TEM.D

T. E. Madigan
Environmental Division

Encl.

Corporate Office
1000 Jefferson Davis Highway
P.O. Box 24159
Richmond, VA 23224
804/231-0669
FAX: 804/230-3934
1-800-543-1812

Branch Office
2800 Cofer Road
P.O. Box 24159
Richmond, VA 23224
804/233-6987
FAX: 804/230-0871
1-800-648-TANK

Branch Office
622 Mohawk Avenue NE
P.O. Box 13826
Roanoke, VA 24034
703/982-0124
FAX: 703/343-5918
1-800-523-6325

Branch Office
1640 DeBaun Avenue
P.O. Box 1294
Chesapeake, VA 23320
804/547-7191
FAX: 804/436-4908

Sales Office
1100 Baker Lane
Winchester, VA 22601
703/722-6503
FAX:703/722-6501

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TABLE OF CONTENTS

Scope of Work:

Conduct soil analysis as required by Federal Underground Storage Tank Regulation 40 CFR Part 280 (subpart G, para. 280.71, 280.72 and 280.74) and Virginia State Water Control Board Technical Standards and Corrective Action Requirements (VR 680-13-02) October 25, 1989. Perform all field work and laboratory analysis to meet these requirements. Field survey will include soil vapor (qualitative) analysis where necessary to determine the presents and/or extent of any contaminated soil. Laboratory analysis will be conducted on all soil samples taken from the excavations following EPA and SWCB approved analytical methods for testing soil total petroleum hydrocarbons (TPH).

A written report will be prepared covering the tank closure assessment field survey and laboratory analysis. This report must be retained by the owner/operator for a period of three years as specified in para. 280.74. A copy of the soil analysis and site map must accompany the amended notification (EPA form 7530-1) of tank closure submitted to the State Water Control Board.

Site History:

Name of facility..... Norfolk Veneer Mills

Location..... 3971 Veneer Rd. Portsmouth

Reason for tank closure.....
(a) Failure of UST
(b) Site upgrade
(c) Permanent closure
(d) Change in service
(e) Other (see remarks)

Number of Tanks..... (see SWCB/EPA form 7530-1

Tank testing results
(if applicable)..... N/A

Inventory loss
(if applicable)..... N/A

Failure/Discharge.....	(a) Catastrophic loss (b) Long term leakage (c) Overfilling (d) Unknown (e) Other (see remarks)
Condition of tank(s).....	Some corrosion and holes noted
Remarks.....	Hydrocarbon odors noted during excavation.

Qualitative Analysis:

Date.....	5/11/90
Conducted by.....	A. Meekins
Visual or olfactory evidence of release.....	some at tank top
Type of field instrument.....	N/A
Calibration.....	N/A
Sample results (include background).....	

Sample No.	Location	Response

Quantitative Analysis:

Date..... 5/17/90

Field sampling by..... A. Meekins

Sample procedure..... loose soil from UST bottoms

Laboratory analysis..... EPA method 8015MOD

Sample results.....

Sample No.	Matrix	Analysis	Location	Results(ppm)
2630-01	soil	8015MOD	Exc. Bottom	542.3
2630-02	soil	8015MOD	Exc. Bottom	44.76
2630-03	soil	8015MOD	Exc. Bottom	24.45
2630-04	soil	8015MOD	Exc. Bottom	2,638.98

Note: Method detection limit = 0.05ppm

Conclusions:

Some hydrocarbon odor was noted during the excavation of both tanks. No groundwater was encountered. This site is located adjacent to Atlantic Creosote and the Naval Shipyard. Background levels of hydrocarbon contamination in the soils in this area could be much higher than the 100ppm action level.

SOLUTIONS LABORATORIES INC

REPORT OF ANALYSIS

05/21/90

W.B. GOODE
1638 DEBAUN AVENUE
P.O. BOX 1294
CHESAPEAKE, VA 23320

ATTN: TOM MADIGAN
SAMPLE OF : 4 SOILS FROM NORFOLK VENEER
SAMPLE ID: 1 (2630-01)
DATE/TIME RECEIVED: 05/11/90 11:30 AM
DATE OF ANALYSIS: 05/17/90
SOL LOG: 2630-01
METHOD: MODIFIED 8015

RESULTS

ORGANIC ANALYSIS	2630-01	P.Q.L.
TOTAL PETROLEUM HYDROCARBONS(ppm)	542.3	0.05

PQL IS THE LOWEST LEVEL THAT CAN BE RELIABLY ACHIEVED WITHIN SPECIFIED LIMITS OF PRECISION AND ACCURACY DURING ROUTINE LABORATORY OPERATING CONDITIONS SPECIFIC TO THE SAMPLE.

SIGNATURE Dorothy Small
DOROTHY S. SMALL
PRESIDENT

814-H Greenbrier Circle, Chesapeake, Virginia 23320
(804) 420-0467

SOLUTIONS LABORATORIES INC

REPORT OF ANALYSIS

05/21/90

W.B. GOODE
1638 DEBAUN AVENUE
P.O. BOX 1294
CHESAPEAKE, VA 23320

ATTN: TOM MADIGAN
SAMPLE OF : 4 SOILS FROM NORFOLK VENEER
SAMPLE ID: 2 (2630-02)
DATE/TIME RECEIVED: 05/11/90 11:30 AM
DATE OF ANALYSIS: 05/17/90
SOL LOG: 2630-02
METHOD: MODIFIED 8015

RESULTS

ORGANIC ANALYSIS	2630-02	P.Q.L.
TOTAL PETROLEUM HYDROCARBONS(ppm)	44.76	0.05

PQL IS THE LOWEST LEVEL THAT CAN BE RELIABLY ACHIEVED WITHIN SPECIFIED LIMITS OF PRECISION AND ACCURACY DURING ROUTINE LABORATORY OPERATING CONDITIONS SPECIFIC TO THE SAMPLE.

SIGNATURE Dorothy S. Small
DOROTHY S. SMALL
PRESIDENT

814-H Greenbrier Circle, Chesapeake, Virginia 23320
(804) 420-0467

SOLUTIONS LABORATORIES INC

REPORT OF ANALYSIS

05/21/90

W.B. GOODE
1638 DEBAUN AVENUE
P.O. BOX 1294
CHESAPEAKE, VA 23320

ATTN: TOM MADIGAN
SAMPLE OF : 4 SOILS FROM NORFOLK VENEER
SAMPLE ID: 3 (2630-03)
DATE/TIME RECEIVED: 05/11/90 11:30 AM
DATE OF ANALYSIS: 05/17/90
SOL LOG: 2630-03
METHOD: MODIFIED 8015

RESULTS

ORGANIC ANALYSIS	2630-03	P.Q.L.
TOTAL PETROLEUM HYDROCARBONS(ppm)	24.45	0.05

PQL IS THE LOWEST LEVEL THAT CAN BE RELIABLY ACHIEVED WITHIN SPECIFIED LIMITS OF PRECISION AND ACCURACY DURING ROUTINE LABORATORY OPERATING CONDITIONS SPECIFIC TO THE SAMPLE.

SIGNATURE Dorothy S. Small
DOROTHY S. SMALL
PRESIDENT

814-H Greenbrier Circle, Chesapeake, Virginia 23320
(804) 420-0467

SOLUTIONS LABORATORIES INC

REPORT OF ANALYSIS

05/21/90

W.B. GOODE
1638 DEBAUN AVENUE
P.O. BOX 1294
CHESAPEAKE, VA 23320

ATTN: TOM MADIGAN
SAMPLE OF : 4 SOILS FROM NORFOLK VENEER
SAMPLE ID: 4 (2630-04)
DATE/TIME RECEIVED: 05/11/90 11:30 AM
DATE OF ANALYSIS: 05/17/90
SOL LOG: 2630-04
METHOD: MODIFIED 8015

RESULTS

ORGANIC ANALYSIS	2630-04	P.Q.L.
TOTAL PETROLEUM HYDROCARBONS(ppm)	2,638.98	0.05

PQL IS THE LOWEST LEVEL THAT CAN BE RELIABLY ACHIEVED WITHIN SPECIFIED LIMITS OF PRECISION AND ACCURACY DURING ROUTINE LABORATORY OPERATING CONDITIONS SPECIFIC TO THE SAMPLE.

SIGNATURE Dorothy S. Small
DOROTHY S. SMALL
PRESIDENT

814-H Greenbrier Circle, Chesapeake, Virginia 23320
(804) 420-0467

VC

CHAIN OF CUSTODY REPORT

SOLUTIONS LOG # 2630

COMPANY NAME: W. R. GOODE
PROJECT MANAGER: TOM MADIGAN
TELEPHONE # 547-7191
FAX # 436-4927
P.O. #
BILLING ADDRESS: 1640 DEBAUN AVENUE
P. O. BOX 1294
CHESAPEAKE, VA. 23320

DATE RECEIVED: 05/11/90
TIME RECEIVED: 1130AM

SOMPLER: A.

SOL.#	CLIENT #	SAMPLED DATE/TIME	CONTAINER	LOCATION	PRESERV.	MATRIX
2630						
-01	1	05/11/90, 0900	40VOA	NORFOLK SHIPBUILDING & DRYDOCK CORP.	4oC	SOIL
-02	2	" 0905	"	"	"	"
-03	3	" 0924	"	"	"	"
-04	4	" 0934	"	"	"	"

SOLUTIONS JOB # ANALYSIS TO BE PERFORMED DATE DUE

ALL SAMPLES TPH GC

RECEIVED BY:

RELINQUISHED BY:

CHAIN OF CUSTODY RECORD

Proj No.	Project Name
2650	NORFOLK VENEER

Samplers *(Signature)*: [signature]

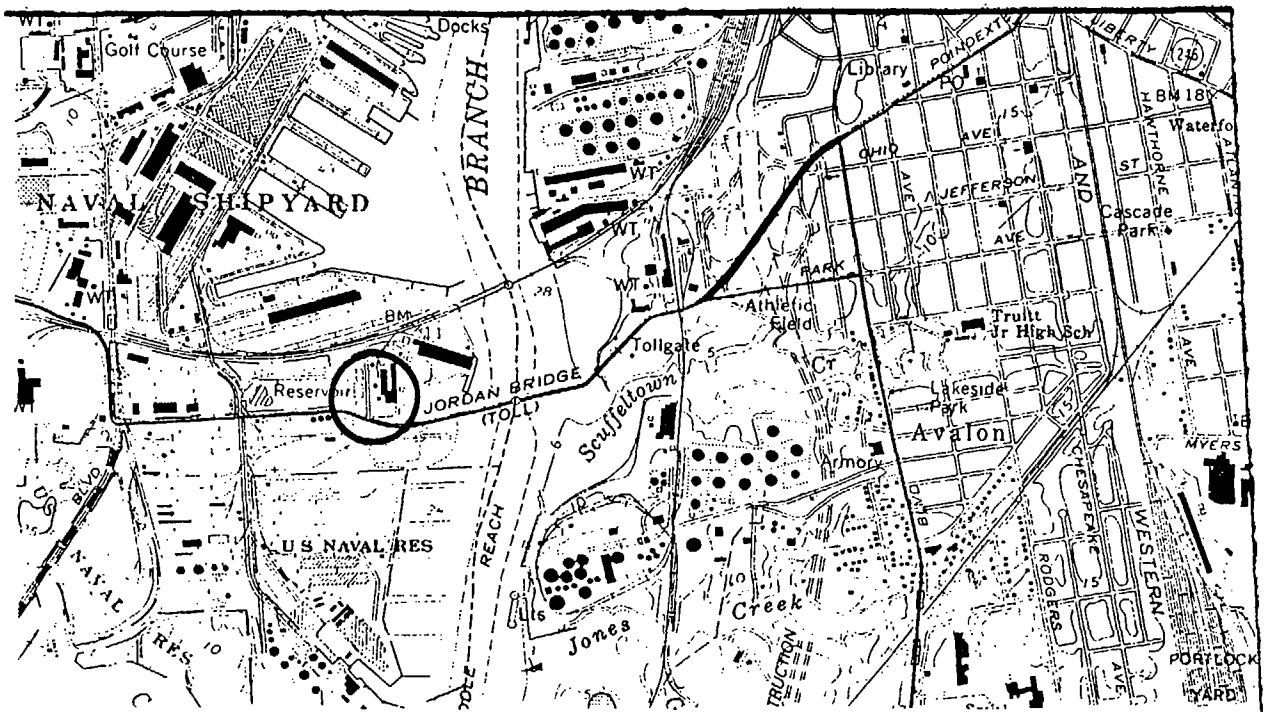
Sta. No.	Date	Time	Comp.	Grab	Station Location	No. of Containers	TPH/[illegible]					Remarks
1	5/11/90	0915hrs		X	9' Depth	2	X					Creosote Smell
2	5/11/90	0905hrs		X	7.5' "	2	X					Slight Petroleum Odor
3	5/11/90	0925hrs		X	8' Depth	2	X					Strong Gas Smell
4	5/11/90	0934hrs		X	7' Depth	2	X					Slight " "

Relinquished by: *(Signature)*	Date Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date Time	Received by: *(Signature)*

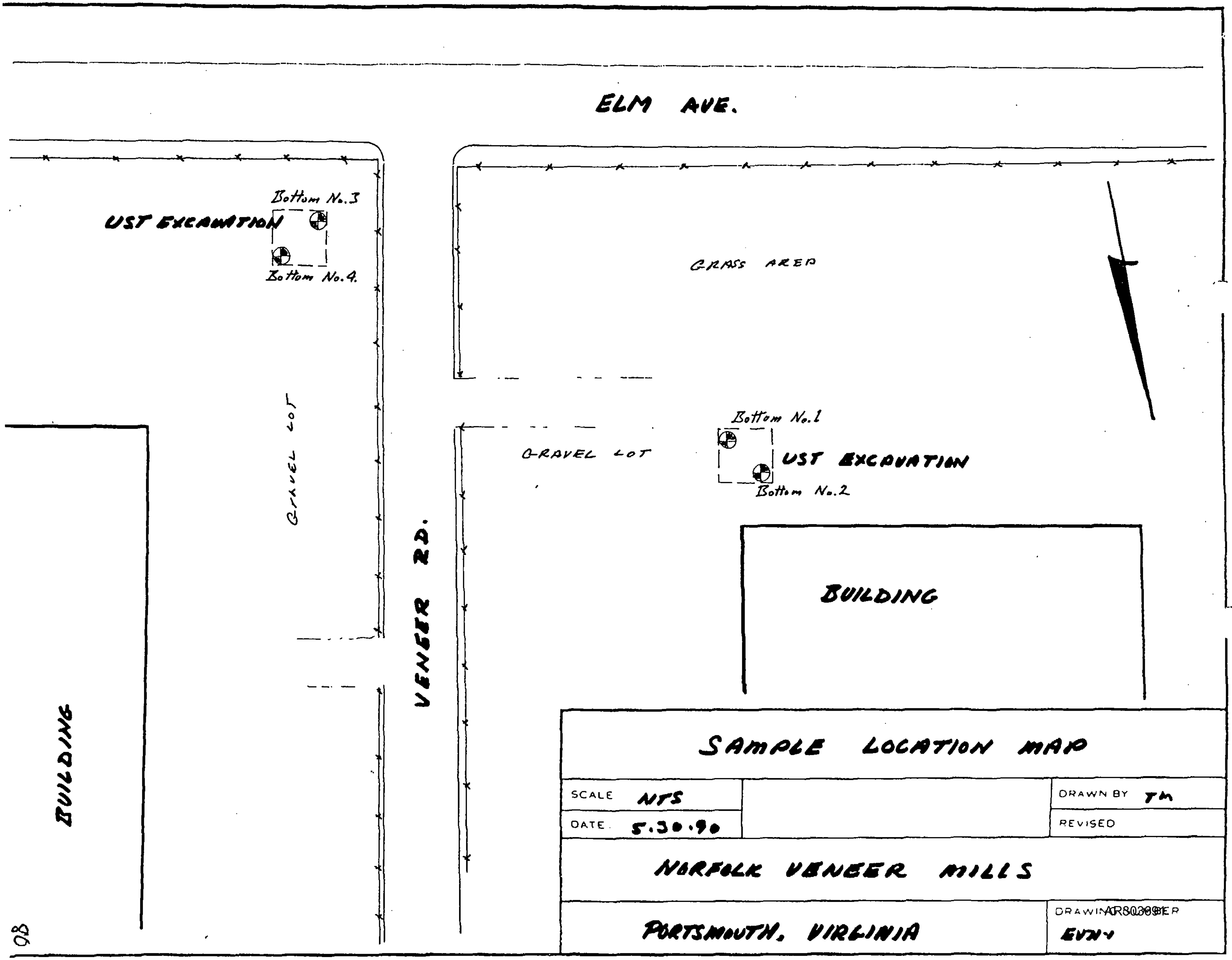
Relinquished by: *(Signature)*	Date Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date Time	Received by: *(Signature)*

Relinquished by: *(Signature)*	Date Time	Received for Laboratory by: *(Signature)*	Remarks
[signature]	5/11 [illegible]	[signature]	

AR303689



SITE LOCATION MAP		
SCALE:	USGS 7.5 MIN SERIES	DRAWN BY
DATE		REVISED
NORFOLK VENEER CO.		
PORTSMOUTH VIRGINIA		DRAWING NUMBER


ELM AVE.
Bottom No.3
UST EXCAVATION
Bottom No.4
GRASS AREA
GRAVEL LOT
Bottom No.1
GRAVEL LOT
UST EXCAVATION
Bottom No.2
VENEER RD.
BUILDING
BUILDING
SAMPLE LOCATION MAP
SCALE NTS
DATE 5.30.90
DRAWN BY TM
REVISED
NORFOLK VENEER MILLS
PORTSMOUTH, VIRGINIA
DRAWING NUMBER
EVN-1

98

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

09/24/90

Mr. Leonard Rafalko
ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Reference:
Project: Norfolk Veneer Mills
Project No.: B05010001
GSAI Group: 2394

Dear Mr. Leonard Rafalko:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

MW-1 S-7 12-14' MW-2 S-5 8-10'

All holding times were met for tests performed on these samples.

Our A2LA membership requires that, should this report be reproduced, it must be reproduced in total.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Gulf States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely yours,

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Soil
Sample ID: MW-1 S-7 12-14'

GSAI Sample: 14336
GSAI Group: 2394
Date Reported: 09/24/90
Discard Date: 10/24/90
Date Submitted: 09/20/90
Date Sampled: 09/19/90
Collected by:
Purchase Order:
Sales Order: 1968
Project No.: B05010001

Test	Analysis	Results as Received	Results Dry Weight	Units	Limit of Quantitation
0111	Moisture	41.8	41.8	%	0.1
	Method: EPA 160.3				
1213	BTEX Analysis, Solids				
	Method: SW-846 8020				
	Benzene	ND	ND	ug/kg	20
	Toluene	ND	ND	ug/kg	20
	Ethylbenzene	75	129	ug/kg	20
	Total Xylenes	253	435	ug/kg	20
6752	Methyl tertiary butyl ether	ND	ND	ug/kg	400
	Method: SW-846 8000				

ND = Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Soil
Sample ID: MW-2 S-5 8-10'

GSAI Sample: 14337
GSAI Group: 2394
Date Reported: 09/24/90
Discard Date: 10/24/90
Date Submitted: 09/20/90
Date Sampled: 09/19/90
Collected by:
Purchase Order:
Sales Order: 1968
Project No.: B05010001

Test	Analysis	Results as Received	Results Dry Weight	Units	Limit of Quantitation
0111	Moisture	35.3	35.3	%	0.1
	Method: EPA 160.3				
1213	BTEX Analysis, Solids				
	Method: SW-846 8020				
	Benzene	ND	ND	ug/kg	20
	Toluene	ND	ND	ug/kg	20
	Ethylbenzene	ND	ND	ug/kg	20
	Total Xylenes	171	264	ug/kg	20
6752	Methyl tertiary butyl ether	ND	ND	ug/kg	400
	Method: SW-846 8000				

ND = Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

10/23/90

Mr. Leonard Rafalko
ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Reference:
Project: Norfolk Veneer Mills
Project No.: B0501-00-01
GSAI Group: 2458

Dear Mr. Leonard Rafalko:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

MW1	MW2	MW3
MW4	MW5	

All holding times were met for tests performed on these samples.

Our A2LA membership requires that, should this report be reproduced, it must be reproduced in total.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Gulf States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely yours,

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Water
Sample ID: MW1

GSAI Sample: 14620
GSAI Group: 2458
Date Reported: 10/17/90
Discard Date: 11/16/90
Date Submitted: 09/26/90
Date Sampled: 09/25/90
Collected by: DT
Purchase Order:
Sales Order: 2029
Project No.: B0501-00-01

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX Analysis Method: EPA 602			
	Benzene	98	ug/l	10
	Toluene	61	ug/l	10
	Ethylbenzene	108	ug/l	10
	Total Xylenes	588	ug/l	10
6753	Methyl tertiary butyl ether Method: SW-846 8000	ND	ug/l	200

ND = Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

AR303696

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Water
Sample ID: MW2

GSAI Sample: 14621
GSAI Group: 2458
Date Reported: 10/17/90
Discard Date: 11/16/90
Date Submitted: 09/26/90
Date Sampled: 09/25/90
Collected by: DT
Purchase Order:
Sales Order: 2029
Project No.: B0501-00-01

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX Analysis Method: EPA 602			
	Benzene	2	ug/l	1
	Toluene	ND	ug/l	1
	Ethylbenzene	5	ug/l	1
	Total Xylenes	8	ug/l	1
6753	Methyl tertiary butyl ether Method: SW-846 8000	ND	ug/l	20

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Water
Sample ID: MW3

GSAI Sample: 14622
GSAI Group: 2458
Date Reported: 10/17/90
Discard Date: 11/16/90
Date Submitted: 09/26/90
Date Sampled: 09/25/90
Collected by: DT
Purchase Order:
Sales Order: 2029
Project No.: B0501-00-01

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX Analysis Method: EPA 602			
	Benzene	ND	ug/l	1
	Toluene	ND	ug/l	1
	Ethylbenzene	ND	ug/l	1
	Total Xylenes	ND	ug/l	1
6753	Methyl tertiary butyl ether Method: SW-846 8000	ND	ug/l	20

ND = Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Water
Sample ID: MW4

GSAI Sample: 14623
GSAI Group: 2458
Date Reported: 10/17/90
Discard Date: 11/16/90
Date Submitted: 09/26/90
Date Sampled: 09/25/90
Collected by: DT
Purchase Order:
Sales Order: 2029
Project No.: B0501-00-01

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX Analysis Method: EPA 602			
	Benzene	ND	ug/l	1
	Toluene	ND	ug/l	1
	Ethylbenzene	ND	ug/l	1
	Total Xylenes	ND	ug/l	1
6753	Methyl tertiary butyl ether Method: SW-846 8000	ND	ug/l	20

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

GULF STATES ANALYTICAL, INC.
5450 Northwest Central Drive, Suite 110
Houston, Texas 77092, (713) 690-4444, FAX (713) 690-5646

ANALYSIS REPORT

ERM, Inc.
116 Defense Highway Suite 300
Annapolis, MD 21401

Attn: Mr. Leonard Rafalko
Project: Norfolk Veneer Mills

Matrix: Water
Sample ID: MW5

GSAI Sample: 14624
GSAI Group: 2458
Date Reported: 10/17/90
Discard Date: 11/16/90
Date Submitted: 09/26/90
Date Sampled: 09/25/90
Collected by: DT
Purchase Order:
Sales Order: 2029
Project No.: B0501-00-01

Test	Analysis	Results as Received	Units	Limit of Quantitation
0516	BTEX Analysis Method: EPA 602			
	Benzene	17	ug/l	1
	Toluene	64	ug/l	1
	Ethylbenzene	85	ug/l	1
	Total Xylenes	252	ug/l	1
6753	Methyl tertiary butyl ether Method: SW-846 8000	ND	ug/l	20
0923	TCL Semivolatiles Method: EPA 625			
	Phenol	ND	ug/l	10
	bis(2-Chloroethyl)ether	ND	ug/l	10
	2-Chlorophenol	ND	ug/l	10
	1,3-Dichlorobenzene	ND	ug/l	10
	1,4-Dichlorobenzene	ND	ug/l	10
	1,2-Dichlorobenzene	ND	ug/l	10
	2-Methylphenol	ND	ug/l	10
	2,2'-oxybis(1-Chloropropane)	ND	ug/l	10
	4-Methylphenol	56	ug/l	10
	N-Nitroso-di-n-propylamine	ND	ug/l	10
	Hexachloroethane	ND	ug/l	10
	Nitrobenzene	ND	ug/l	10
	Isophorone	ND	ug/l	10
	2-Nitrophenol	ND	ug/l	10
	2,4-Dimethylphenol	ND	ug/l	10
	bis(2-Chloroethoxy)methane	ND	ug/l	10
	2,4-Dichlorophenol	ND	ug/l	10
	1,2,4-Trichlorobenzene	ND	ug/l	10
	Naphthalene	9,400	ug/l	10
	4-Chloroaniline	ND	ug/l	10

ERM, Inc.

GSAI Sample: 14624
GSAI Group: 2458

Sample ID: MW5

Test	Analysis	Results as Received	Units	Limit of Quantitation
0923	TCL Semivolatiles Method: EPA 625			
	Hexachlorobutadiene	ND	ug/l	10
	4-Chloro-3-methylphenol	ND	ug/l	10
	2-Methylnaphthalene	2,500	ug/l	10
	Hexachlorocyclopentadiene	ND	ug/l	10
	2,4,6-Trichlorophenol	ND	ug/l	10
	2,4,5-Trichlorophenol	ND	ug/l	50
	2-Chloronaphthalene	ND	ug/l	10
	2-Nitroaniline	ND	ug/l	50
	Dimethylphthalate	ND	ug/l	10
	Acenaphthylene	41	ug/l	10
	2,6-Dinitrotoluene	ND	ug/l	10
	3-Nitroaniline	ND	ug/l	50
	Acenaphthene	970	ug/l	10
	2,4-Dinitrophenol	ND	ug/l	50
	4-Nitrophenol	ND	ug/l	50
	Dibenzofuran	870	ug/l	10
	2,4-Dinitrotoluene	ND	ug/l	10
	Diethylphthalate	ND	ug/l	10
	4-Chlorophenylphenyl ether	ND	ug/l	10
	Fluorene	1,200	ug/l	10
	4-Nitroaniline	ND	ug/l	50
	4,6-Dinitro-2-methylphenol	ND	ug/l	50
	N-Nitrosodiphenylamine	ND	ug/l	10
	4-Bromophenylphenyl ether	ND	ug/l	10
	Hexachlorobenzene	ND	ug/l	10
	Pentachlorophenol	ND	ug/l	50
	Phenanthrene	5,300	ug/l	10
	Anthracene	610	ug/l	10
	Carbazole	450	ug/l	10
	Di-n-butylphthalate	ND	ug/l	10
	Fluoranthene	1,300	ug/l	10
	Pyrene	1,200	ug/l	10
	Butylbenzylphthalate	ND	ug/l	10
	3,3'-Dichlorobenzidine	ND	ug/l	10
	Benzo(a)anthracene	540	ug/l	10
	Chrysene	480	ug/l	10
	bis(2-Ethylhexyl)phthalate	ND	ug/l	10
	Di-n-octylphthalate	ND	ug/l	10

ERM, Inc.

GSAI Sample: 14624
GSAI Group: 2458

Sample ID: MW5

Test	Analysis	Results as Received	Units	Limit of Quantitation
0923	TCL Semivolatiles Method: EPA 625			
	Benzo(b)fluoranthene	280	ug/l	10
	Benzo(k)fluoranthene	250	ug/l	10
	Benzo(a)pyrene	290	ug/l	10
	Indeno(1,2,3-cd)pyrene	130	ug/l	10
	Dibenz(a,h)anthracene	41	ug/l	10
	Benzo(ghi)perylene	110	ug/l	10

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Gulf States Analytical, Inc.
Reviewed and Approved by:

Kathleen Eaves

Kathleen Eaves
Project Manager

The ERM Group

Annapolis Md
301-266-0006 L. Ratalko / D. Terry

Sample Chain of Custody

W.O.No.: B0501000.01
Project Name: Norfolk Veneer Mills
Sampler:

ERM Sample Number	Date	Time	COMP	GRAB	Sample Location	Number of Containers	BTEX + MTBE	Remarks
—	9/19/90	1300		X	MW-1 S-7 12-14'	1	✓	STANDARD TURNAROUND
—	9/19/90	1430		X	MW-2 S-5 8-10'	1	—	Send results to L. Ratalko / D Terry 301-266-0006 Both Soil Samples

Sample Relinquished	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
David B. Terry	9/19/90	4:53	[illegible]	9/20/90	8:30	

AR303703

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler. Gold copy extra copy as needed (warehouse).

GULF STATES ANALYTICAL, INC.

Chain of Custody

ERM, Inc.

Sample Number

Client: Masco-Norfolk Veneer Mills P.O. No.:

Work Order No.: BOSC01-00-01 Project Name: Norfolk Veneer Mills

Submit Report to: Leonard Rafalko FSC:

Sampler: David Terry, Tracy A Project Location: Portsmouth, VA Analyses

Sample Type:
HZ Hazardous
SO Soil
PW Potable Water
GW Ground Water
SW Surface Water
WW Waste Water
SL Sludge

Field sample number / sample identification	Date	Time	COMP	GRAB	Number of Containers (Total)	Sample Type (see reference)	BTEX	MTBE	GC Fingerprint Diesel Range	TCLSEM			Remarks:
MW1	9/25/96	1:50pm		✓	4		2	1	0	1			Note:
MW2	9/25/96	1:30pm		✓	3		2	1	0	0			Standard
MW3	9/25/96	1pm		✓	3		2	1	0	0			Turnaround
MW4	9/25/96	12:45pm		✓	3		2	1	0	0			
MW5	9/25/96	1:15pm		✓	4		2	1	0	1			Call 301 266 0006 if there are any question.

Sample Relinquished by:	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
David Terry	9/25/96	6pm	Dana Daniels	9/26/96	1050	

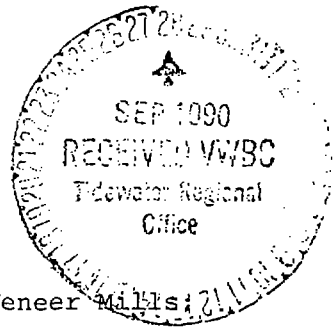
AR303704

Norfolk Veneer Mills, Inc.

P. O. BOX 2157

PORTSMOUTH, VIRGINIA 23702

September 27, 1990



Mr. Herbert Berger
Virginia State Water Control Board
Tidewater Regional Office
287 Pembroke Office Park
Suite 310, Pembroke No. 2
Virginia Beach, VA 23462-2955

RE: Summary of Field Activities at Norfolk Veneer Mills;
Site Characterization - Phase 1/Part 1

Dear Mr. Berger:

Norfolk Veneer Mills (NVM) has retained Environmental Resources Management, Inc. (ERM) for the purpose of conducting the underground storage tank (UST) site assessment at the NMV plant located at 3971 Veneer Road, Portsmouth, VA. ERM initiated field activities at the NMV plant during the weeks of 17 and 24 September, 1990.

The attachment describes the site characterization, phase 1/part 1 progress as follows:

-- Soil Vapor Survey Result
-- Well installation/observations
-- Sample collection

Analysis results are expected by October 19, 1990.

Sincerely,

Roger W. Stenersen
Plant Manager

RWS:sh

Enclosures-3

NORFOLK VENEER MILLS

ATTACHMENT - Field Activities Summary Report
Site Characterization - Phase 1/Part 1

General Description

The field activities were designed to conduct a site characterization at the the locations of two former underground storage tanks (USTs) in fulfillment of Virginia State Water Control Board Regulations (Figure 1 attached). To date the field activities have consisted of a soil gas survey, the installation of five ground water monitoring wells (MW-1 through MW-5), and the collection of soil and ground water samples for laboratory analysis. The soil gas survey was designed to delineate the lateral extent of potential areas of soil and/or ground water quality degradation due to the presence of gasoline in the subsurface. The soil gas survey utilized an organic vapor analyzer (OVA) to detect total volatile organic vapors in the unsaturated zone soils. These concentrations were measured by connecting the OVA to polyvinylchloride (PVC) soil gas probes which were installed around the sites of the two former USTs. Ten soil gas survey locations were completed around UST 1; thirteen soil gas locations were completed around UST 2.

Soil Vapor Survey Results

Results of the soil gas survey showed a maximum of about 2500 ppm at a soil gas probe location 10 feet south of the center of the excavation pit for UST 1. Although soil gas concentrations were highest at the former location of UST 1, the soil gas survey indicated that the lateral extent of soil quality degradation is limited to the area immediately surrounding the location of former UST 1.

The highest soil gas concentration at the location of former UST 2 was approximately 100 ppm. The soil gas survey indicated that the area of positive soil gas concentrations associated with former UST 2 extends to a lateral distance of about 65 feet from the northern edge of a small tidal channel that is located along the southern property boundary of the Norfolk Veneer Mills plant. The northern edge of the tidal channel was the limit of accessible area for the soil gas survey.

Well Installation/Sampling Observations

Each soil boring was advanced by hollow stem auger and soil samples were collected continously until the water table was encountered, with at least one sample collected below the water table. Each soil sample was inspected by an on-site ERM hydrogeologist for evidence of non-aqueous hydrocarbons in the soil. Free non-aqueous hydrocarbon was identified in soil samples from monitoring wells 2, 3, and 5. Based on the field inspection, it is indeterminate whether the free hydrocarbon observed in the soil samples at MW-2 and 3 was gasoline derived. However, the free hydrocarbon observed at MW-5 did not appear to be gasoline.

Ground water monitoring wells were installed to identify the vertical extent of soil quality degradation and tc confirm the presence or absence of ground water quality degradation. Ground water monitoring well locations were selected based

on the results of the soil gas survey. The soil gas survey indicated a larger area of positive soil gas readings associated with UST 2 than the area associated with UST 1. Therefore, monitoring well installations were concentrated near the area associated with UST 2 (Figure 1). One ground water monitoring well was installed at the former location of each UST. Three additional wells were installed near UST 2 in areas of positive soil gas readings. The monitoring wells were completed to depths between 12 and 17 feet. The screen interval for each well was constructed across the water table to detect the possible present of floating free-phase non-aqueous hydrocarbons.

Sample Collection

Soil samples were collected for laboratory analysis from MW-1 and MW-2 from depth intervals of 12 - 14 feet and 8-10 feet respectively. These samples were sent to Gulf States Analytical Laboratory, Inc., Houston, Texas, for analysis of benzene, toluene, ehthybenzene, xylenes (BTEX scan), and methyl tertiary butyl ether (MTBE). BTEX and MTBE were selected for analysis because they are reliable indicator compounds of gasoline.

Water samples from monitoring wells 1 through 5 were collected on 25 September, for laboratory analysis of BTEX and MTBE. In addition, since no free product was observed, an additional ground water sample from MW-5 was submitted for semi-volatile analysis.

Analysis results for both soil and water samples are expected approximately three weeks form the date submitted to the laboratory.

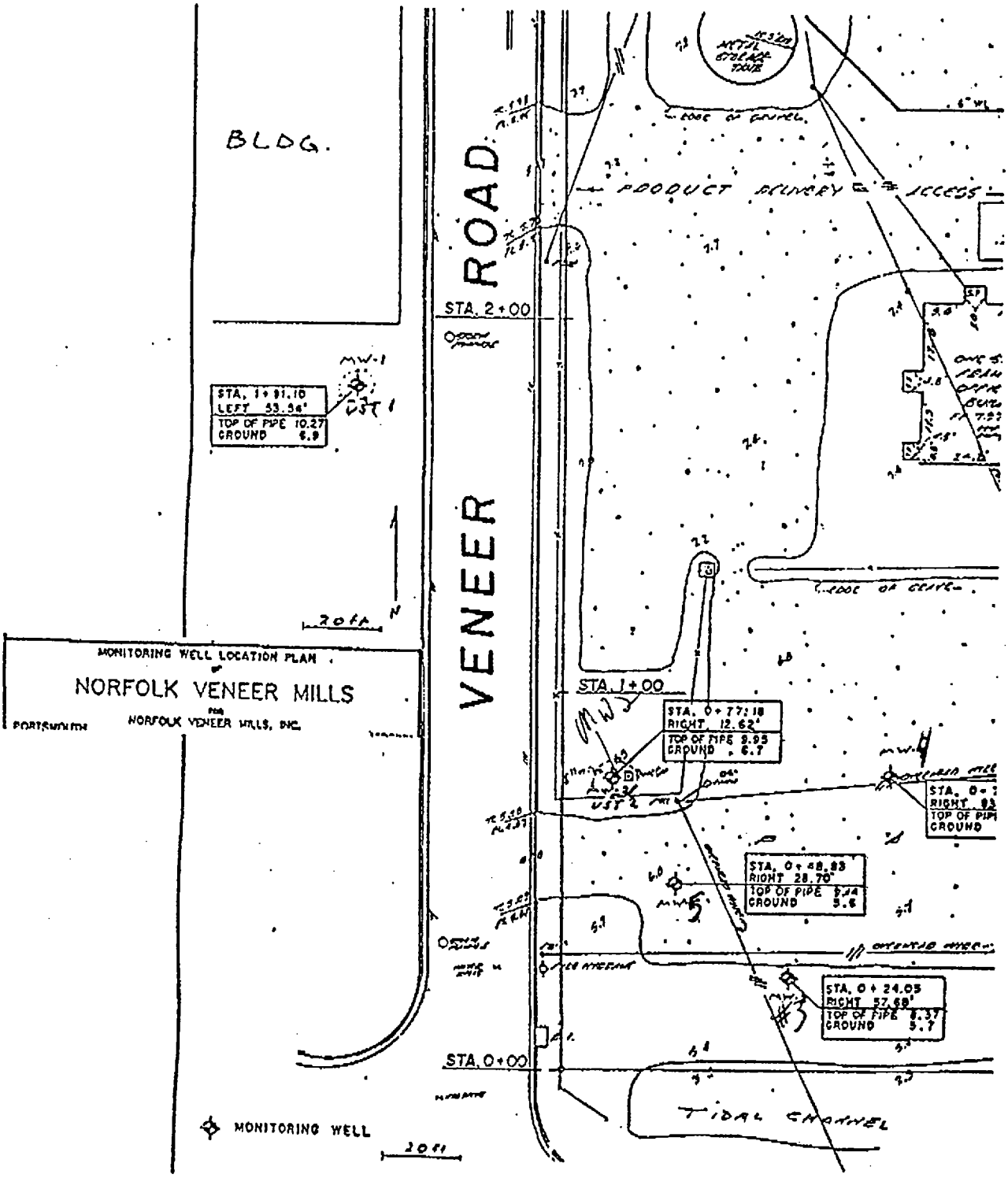


FIGURE 1. LOCATION OF MONITORING WELLS

EAS-SHED (File)

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD
2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056
TDD (804) 367-9763

Please reply to: Tidewater Regional Office
287 Pembroke Office Park
Suite 310 Pembroke No. 2
Virginia Beach, Virginia 23462-2955
(804) 552-1840

August 29, 1990

Roger W. Stenerson
Norfolk Veneer Mills, Inc.
P.O. Box 2157
Portsmouth, Virginia 23702

Re: Deadline extension, Underground Storage Tank release report for Norfolk Veneer Mills, Inc., 3971 Elm Avenue, Portsmouth, Virginia.

Dear Mr. Stenerson:

This is in response to your August 24, 1990, request for an extension of the deadline for your report of subsurface petroleum contamination at this site. A 30 day extension is granted. Please submit the required report to this office by October 1, 1990.

If an additional deadline extension becomes necessary, it must be approved by this Agency prior to expiration of the extended deadline. A request for any additional extension must be fully justified and completely substantiated with supporting documentation of actual delays, as opposed to potential delays. A new schedule for completion of work and submittal of reports must be provided. Our Compliance Auditing staff will monitor receipt of reports, and may issue letters of delinquency or take other actions, as appropriate. Additional requests for extension of a deadline for the same report, and requests for extension of more than 30 days cannot be granted by this office; however, such requests will be reviewed by this office and forwarded to State Water Control Board headquarters for additional review and approval, if warranted.

If you have questions, please call Herbert Berger or David Borton of my staff at (804) 552-1840.

Sincerely,

D. J. Kain for

L. S. McBride
Director
Tidewater Regional Office

cc: SWCB-OWRM-GWP ref PC91-091
SWCB-TRO-OE&CA

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD
2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056
TDD (804) 367-9763

Please reply to: Tidewater Regional Office
287 Pembroke Office Park
Suite 310 Pembroke No. 2
Virginia Beach, Virginia 23462-2955
(804) 552-1840

August 29, 1990

Roger W. Stenerson
Norfolk Veneer Mills, Inc.
P.O. Box 2157
Portsmouth, Virginia 23702

Re: Deadline extension, Underground Storage Tank release report for Norfolk Veneer Mills, Inc., 3971 Elm Avenue, Portsmouth, Virginia.

Dear Mr. Stenerson:

This is in response to your August 24, 1990, request for an extension of the deadline for your report of subsurface petroleum contamination at this site. A 30 day extension is granted. Please submit the required report to this office by October 1, 1990.

If an additional deadline extension becomes necessary, it must be approved by this Agency prior to expiration of the extended deadline. A request for any additional extension must be fully justified and completely substantiated with supporting documentation of actual delays, as opposed to potential delays. A new schedule for completion of work and submittal of reports must be provided. Our Compliance Auditing staff will monitor receipt of reports, and may issue letters of delinquency or take other actions, as appropriate. Additional requests for extension of a deadline for the same report, and requests for extension of more than 30 days cannot be granted by this office; however, such requests will be reviewed by this office and forwarded to State Water Control Board headquarters for additional review and approval, if warranted.

If you have questions, please call Herbert Berger or David Borton of my staff at (804) 552-1840.

Sincerely,

D. J. Kain for

L. S. McBride
Director
Tidewater Regional Office

cc: SWCB-OWRM-GWP ref PC91-091
SWCB-TRO-OE&CA

Norfolk Veneer Mills, Inc.

P. O. BOX 2157

PORTSMOUTH, VIRGINIA 23702

August 24, 1990

Mr. Herbert E. Berger, Jr.
Virginia Water Control Board
Tidewater Regional Office
287 Pembroke Office Park
Virginia Beach, VA 23462

RE: Letter dated July 18, 1990, from Donald Kain to Roger Stenersen; Assess USTs

Dear Mr. Berger:

Norfolk Veneer Mills is requesting an extension to comply with the captioned letter. The request is due in part on the screening process of contractors. The time delay ensured us in selecting the most cost-effective contractor. We expect to notify the selected firm by August 28, 1990.

A proposed plan and preliminary schedule shows the project time takes eight (8) weeks from date of purchase order issuance. Norfolk Veneer Mills expects issuance of the purchase order contract by September 5, 1990.

Any questions, please call me at (804) 393-2551.

Sincerely,

Roger W. Stenersen
Plant Manager

RWS:sh

POLLUTION COMPLAINT LOG

1. Pollution Complaint No. 91-0091
2. Region TRO Date 7-17-90 Time _____
3. Reported by Roger Stenersen Phone 804-393-255
   Address Norfolk Veneer Mills
4. Stream — City/County Portsmouth Basin —
5. Specific Location Norfolk Veneer Mills
   3971 Elm Ave and Veneer Rd
6. Type of Pollution Gasoline Fish Kill _____
7. Pollution Source [if known] LUST
8. Time/Date of Spill — Volume/Duration of Spill —
   Volume Reaching Water —
9. Remarks: [Extent of pollution, species/number fish kill, etc.]
   Contaminated Soils discovered Via Tank Pull (2639ppm TPH
   Notified of Release Via Closure

10. Report Rec'd by: S H Berger
11. Notified:

12. Investigators: _____
13. Recommendations for future actions:
    Will send assessment LTR

    Roger Stenersen
    Norfolk Veneer Mills
    P.O. Box 2157
    Portsmouth Va
    23702

Regional Office _____
SHD-Water Programs _____
Dept. of Waste Mgmt. _____
EPA _____
Coast Guard _____
Other _____

AR303712

05

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0068
APPROVAL EXPIRES 6-30-90

VIRGINIA WATER CONTROL BOARD - UST PROGRAM
2111 NORTH HAMILTON STREET
RICHMOND, VIRGINIA 232[illegible]

COPY

ID Number

Date Received

STATE USE ONLY

RECEIVED
JUL 1990
WATER CONTROL BOARD

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means -

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes.
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must by completed for **each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached: 2

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)
Norfolk Veneer Mills

Street Address
3971 Elm Ave. & Veneer Rd.

County
Portsmouth, Va. , 23702

City | State | ZIP Code

804-393-2551

Area Code | Phone Number

Type of Owner (Mark all that apply [X])

- [ ] Current
- [ ] Former
- [ ] State or Local Gov't
- [ ] Federal Gov't (GSA facility I.D. no. _____)
- [X] Private or Corporate
- [ ] Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here [X])

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable

County

City (nearest) | State | ZIP Code

Indicate number of tanks at this location: 2

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands: [ ]

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here [ ])	Job Title	Area Code	Phone Number
Roger Stenersen	Plant Manager	804-393-2551	

IV. TYPE OF NOTIFICATION

[X] Mark box here only if this is an amended or subsequent notification for this location

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
Roger Stenersen, Plant Manager	Roger Stenersen	7-10-90

CONTINUE ON REVERSE SIDE

EAS → #ED
(File)

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD
2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056
TDD (804) 367-9763

Please reply to: Tidewater Regional Office
287 Pembroke Office Park
Suite 310 Pembroke No. 2
Virginia Beach, Virginia 23462-2955
(804) 552-1840

July 18, 1990

Roger Stenerson
Norfolk Veneer Mills
P.O. Box 2157
Portsmouth, Virginia 23702

Dear Mr. Stenerson:

Reports concerning your facility at Norfolk Veneer Mills, 3971 Elm Avenue, Portsmouth, Virginia, indicate potential petroleum contamination of State waters by a leaking underground storage tank (UST) system. To assess this potential, please perform site, risk, and remediation assessments by August 31, 1990. Assessment guidelines are attached for your reference. Based on assessments, we may request a Corrective Action Plan. If free product is present on site, a Free Product Removal Report will be required by August 31, 1990, also.

A report of abatement actions and results of the "site check" required by State UST regulations should be sent to this office by August 6, 1990. A proposed plan and preliminary schedule for performing site, risk, and remediation assessments may be sent to this office prior to implementation. This preliminary review of your proposed assessment procedures is provided to ensure their adequacy (i.e., monitoring well placement, sample types and locations, etc.), in order to prevent costly resampling, remobilization of drill rigs, etc.

Please refer to Parts V and VI of the attached State Regulations extract for information about your reporting, investigation, and cleanup responsibilities under State regulations.

If you have any questions, please call Herbert Berger or David Borton at (804) 552-1840.

Sincerely,

D. G. Kain

Donald G. Kain
Water Resources Manager

Enclosures (Guidelines, VR 680-13-02 extract)
cc: SWCB-OWRM-GWP (PC91-091)
SWCB-TRO-OE&CA

AR303714

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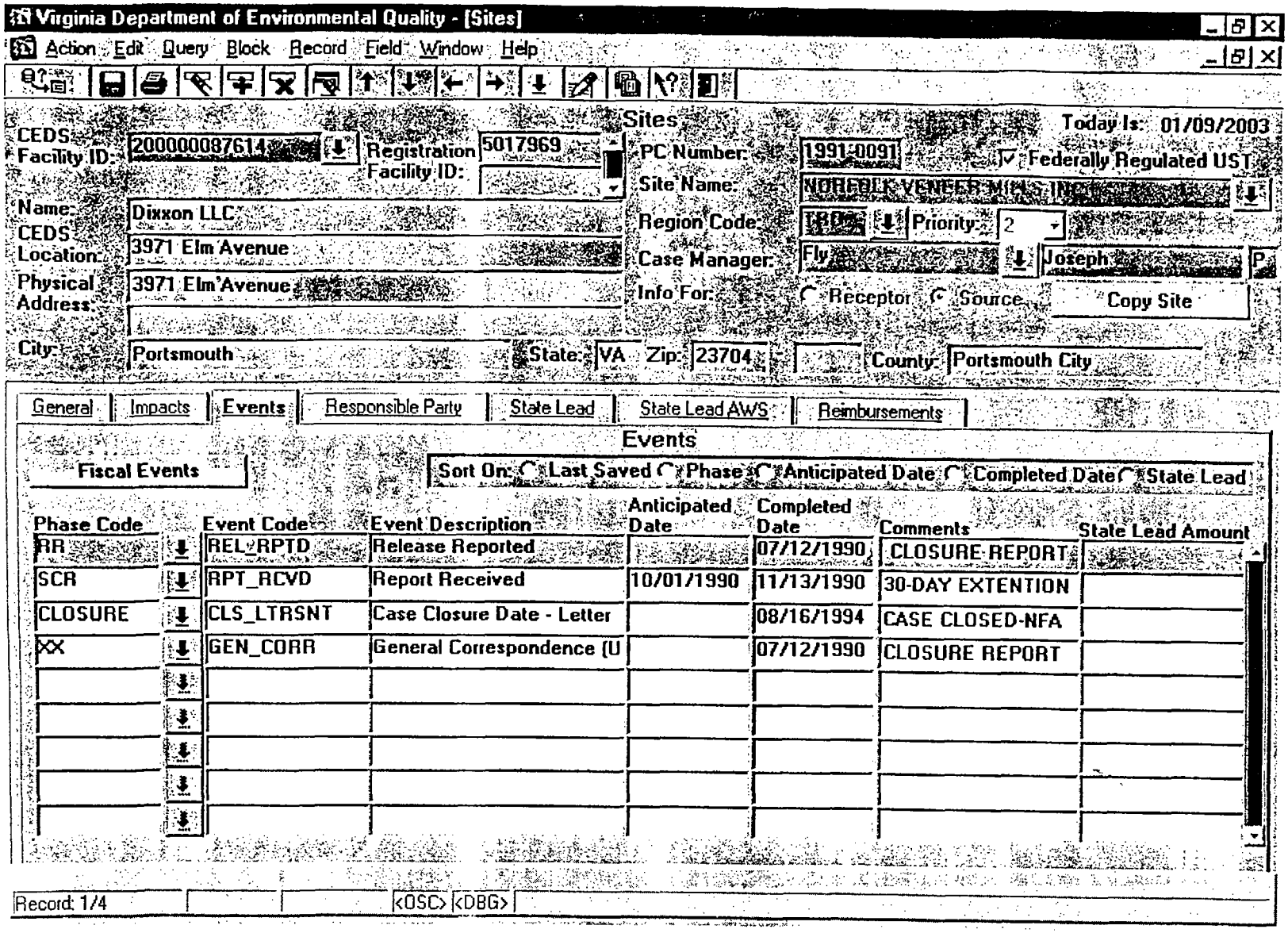
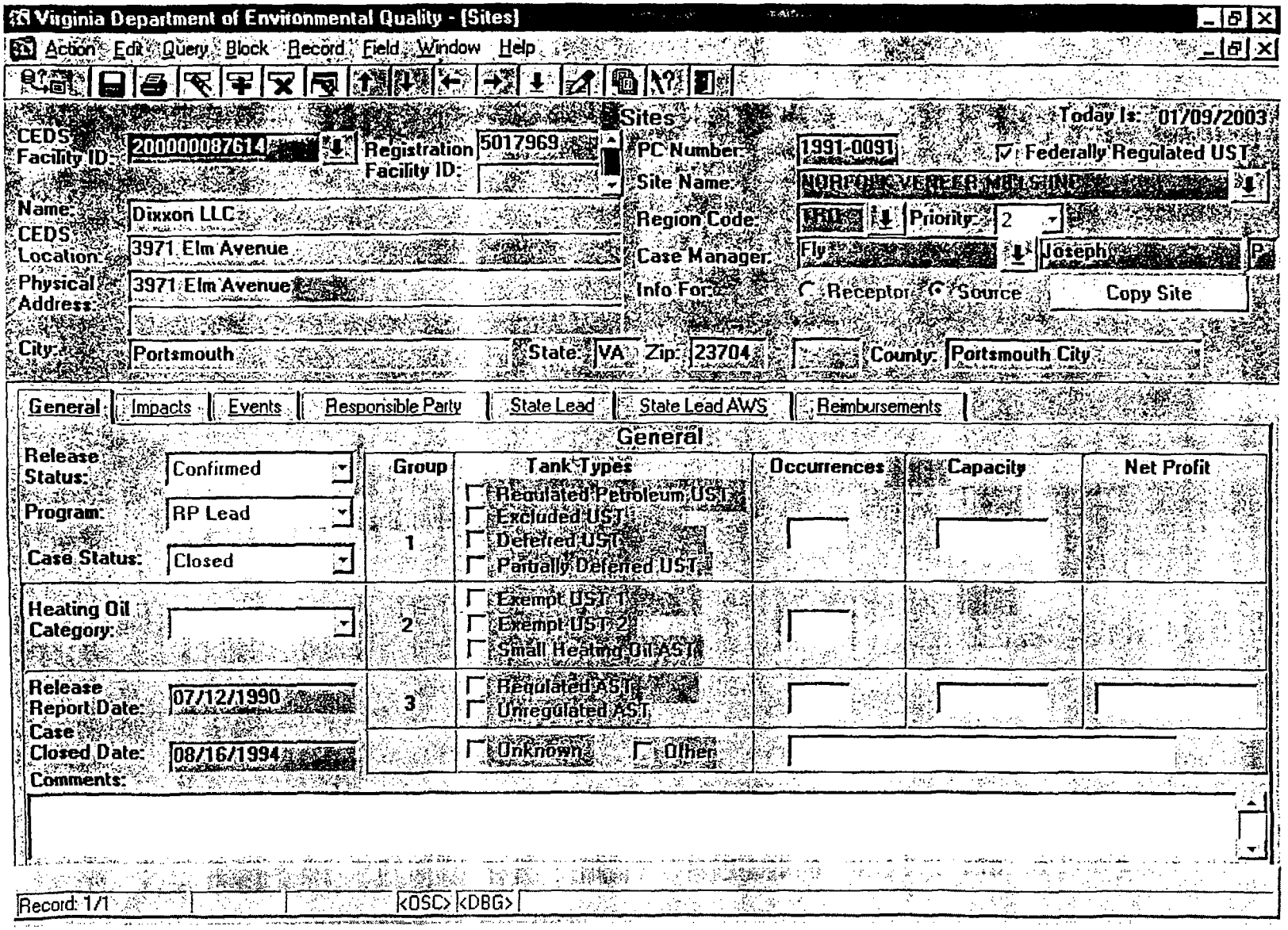

Virginia Department of Environmental Quality - [Sites]
Action Edit Query Block Record Field Window Help
Sites
Today Is: 01/09/2003
CEDS Facility ID: 200000087614
Registration Facility ID: 5017969
PC Number: 1991-0091
Federally Regulated UST
Site Name: NORFOLK VENEER MILLS, INC.
Name: Dixxon LLC
CEDS Location: 3971 Elm Avenue
Region Code: TRO
Priority: 2
Case Manager: Fly
Joseph
Physical Address: 3971 Elm Avenue
Info For: Receptor Source
Copy Site
City: Portsmouth
State: VA
Zip: 23704
County: Portsmouth City
General
Impacts
Events
Responsible Party
State Lead
State Lead AWS
Reimbursements
Events
Fiscal Events
Sort On: Last Saved Phase Anticipated Date Completed Date State Lead
Phase Code
Event Code
Event Description
Anticipated Date
Completed Date
Comments
State Lead Amount
RR REL_RPTD Release Reported 07/12/1990 CLOSURE REPORT
SCR RPT_RCVD Report Received 10/01/1990 11/13/1990 30-DAY EXTENTION
CLOSURE CLS_LTRSNT Case Closure Date - Letter 08/16/1994 CASE CLOSED-NFA
XX GEN_CORR General Correspondence (U 07/12/1990 CLOSURE REPORT
Record: 1/4
<OSC>
<DBG>


Virginia Department of Environmental Quality - [Sites]
Action Edit Query Block Record Field Window Help
Sites
Today Is: 01/09/2003
CEDS Facility ID: 200000087614
Registration Facility ID: 5017969
PC Number: 1991-0091
Federally Regulated UST
Site Name: NORFOLK WELDING INC
Name: Dixxon LLC
Region Code: IRO
Priority: 2
CEDS Location: 3971 Elm Avenue
Case Manager: Fly Joseph
Physical Address: 3971 Elm Avenue
Info For: Receptor Source
Copy Site
City: Portsmouth
State: VA
Zip: 23704
County: Portsmouth City
General
Impacts
Events
Responsible Party
State Lead
State Lead AWS
Reimbursements
General
Release Status: Confirmed
Program: RP Lead
Case Status: Closed
Group
Tank Types
Regulated Petroleum UST
Excluded UST
Deferred UST
Partially Deferred UST
Occurrences
Capacity
Net Profit
1
Heating Oil Category:
2
Exempt UST 1
Exempt UST 2
Small Heating Oil AST
Release Report Date: 07/12/1990
Case Closed Date: 08/16/1994
3
Regulated AST
Unregulated AST
Unknown
Other
Comments:
Record: 1/1
<OSC>
<DBG>

9-26-90

Neal Peters; Norfolk Veener Mills

Area 2 down gradient of area 1. Flow East toward River. Small drainage parrall to Elm avenue may influence GW Flow. Total BTEX will be ran on GW. Oil/Water interface probe didnt detect any measurable thighness of PSH. Assessment report should be in about 1 month. Soil Samples obtained from SVB 2 wells only?

Assess rec'd of Nov., 90. DB 2-5-91
Owner request review

7/2/92 There has been no action ~~in this case~~ since 11/18/91. The SWCB needs to review the SCR and contact the site with an update.

8-16-94 Reviewed SCR and addl reports on file. Base on site location + conditions, source removal and lack of free product + receptors, sent ltr requiring no addl work.

9-5-90

Neal Peters 804-330-8990
Consultant for Norfolk Veneer Mills
A soil Vapor survey will be used to bigrade well locations.
Plan to perform this Vapor survey the Week of ~~Oct~~ September 10th

~~Hat~~ Soil Samples will be analyzed for BTEX ~~for~~ and MTBE.
If soils are not contaminated near (OVA) the ~~wat~~ water table wells will not be installed ~~now~~ immediatly. When soil Samples are analyzed and if they are Hot Wells will be installed

May be Drilling by week of the 17th. at a minm - 2 stand pipe wells will be installed in the tank pit.

SHB
9-26-90

Neal Peters @
Soil Gas survey; 5 wells, Samples Soil & GW Samples, Soils from wells outside of tank Area not Sampled. UST 2 showed more extensive lateral VP Contamination. 1 MW in tank 1 area

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Peter W. Schmidt
Director

Water Regional Office
287 Pembroke Office Park
Pembroke 2, Suite 310
Virginia Beach, Virginia 23462
FAX (804) 552-2075

August 16, 1994

Roger W. Stenersen
Plant Manager
Norfolk Veneer Mills, Inc.
Box 2157, Craddock Station
Portsmouth, Virginia 23702

re: Norfolk Veneer Mills Facility, 3971 Elm Ave., Portsmouth, Virginia
DEQ ref. PC#91-091

Dear Mr. Stenersen:

Thank you for providing your Site Characterization Report and additional reports of subsurface petroleum contamination for the above referenced site. Based on the information provided in these reports, the Department of Environmental Quality (DEQ) - Water Division requires no further assessment or remedial action at this site. However, should additional evidence of environmental contamination be discovered in the future, further assessment and remediation may be required.

If you have any questions regarding this matter, please contact me at (804) 552-1153.

Sincerely,

J. Patrick Fly
Geologist Senior
Ground Water Section

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

2111 N. Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056
TDD (804) 367-9763

Please reply to:
Tidewater Regional Office
287 Pembroke Office Park
Pembroke Two - Suite 310
Virginia Beach, VA 23462
(804) 552-1840

November 29, 1990

Mr. Roger W. Stenersen
Plant Manager
Norfolk Veneer Mills, Inc.
Box 2157, Cradock Station
Portsmouth, VA

Re: Pollution Complaint Number PC 91-091

Dear Mr. Stenersen:

Your assessments report dated November 7, 1990, has been received in the Tidewater Regional Office, and has been assigned to Mr. Herbert Berger for review. The telephone number is (804) 552-1840.

We currently have a tremendous case load under review. If you have not received a response to your submittal within 60 days, please contact the above staff member to determine the status of your case. Your patience and cooperation are appreciated.

Sincerely,

Roger K. Everton

Roger K. Everton
Supervisor, Technical Services

cc: SWCB-OWRM-GWP (remediation)
SWCB-TRO-OE&CA

Elvezio G. Turn
New Owner
Norfolk Veneer Mills
393-2551